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January 4, 1989

Mr. Narindar Kumar Site Investigation and Support Branch Waste Management Division Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, Georgia 30365

Subject:

Final Site Screening Investigation Report

Champion International Corporation

Orangeburg, Orangeburg County, South Carolina

TDD No. F4-8801-06

Revision 0

Dear Mr. Kumar:

Please find enclosed three (3) copies of the Final Site Screening Investigation Report for Champion International Corporation. The additional bound copy has been requested by Georgia-Pacific and should be sent to the attention of Lawrence P.E. Otwell at the following address:

Georgia-Pacific P. O. Box 105603 Atlanta, GA 30348

If you have any questions or comments please contact me at NUS Corporation.

Very truly yours,

Teresa R. Sawyer Project Manager

Deresa R Manager

TRS/dwf

Enclosures (3)

Approved



	JAN V
NUS CORPORATION SUPERFUND DIVISION	PROJECT NOTES
O: Brian Hollaway	DATE: December 27, 1988
ROM: Teresa Sawyer	COPIES:
SUBJECT: Multiple HRS Scores	
EFERENCE:	
he reason there are multiple HRS scores enclose reasonable estimate.10,000 is a maximum quar	d is because the exact waste quantity is not known. 200 drums is stity used to observe how it affects the score.

FINAL SITE SCREENING INVESTIGATION CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA EPA ID #SCD003342177

Prepared Under TDD No. F4-8801-06 CONTRACT NO. 68-01-7346

Revision 0

FOR THE

WASTE MANAGEMENT DIVISION U.S. ENVIRONMENTAL PROTECTION AGENCY

December 27, 1988

NUS CORPORATION SUPERFUND DIVISION

Prepared By

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NOTICE

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EXECUTIVE SUMMARY

Champion International Corporation, in Orangeburg, Orangeburg County, South Carolina has not operated as such since Georgia-Pacific acquired the property on June 12, 1988. Decolam, Inc. has been in operation on a portion of the property since March 7, 1988. Decolam is a vinyl laminating plant owned by former employees of Champion International. The paneling manufacturing process from the fifties until 1988 included a veneer peeling operation and a finishing operation. The veneer peeling operation was discontinued in the early 60's. Champion International facility originally treated, stored and disposed of hazardous waste, but in the early 1980s the status was changed to a generator of hazardous waste only. There was concern about drums that were disposed of on the back of the property.

Orangeburg County is located in the Middle Atlantic Coastal Plain Physiographic Province. The area is overlain by Pleistocene deposits of silt, sand, clay and gravel which are 50 to 120 feet deep in the study area. Underlying the surficial deposits are quartzose sands, calcareous clays and thin limestone of the McBean Formation which interfinger with the fossiliferous, cherty, glauconitic, and dolomitic Santee limestone. These are the three primary aquifers in the Orangeburg area and all are unconfined. The limestone aquifers are very productive.

There is a possibility of groundwater contamination because uncontained waste was buried. There are approximately 20 residences within 4 miles of Chamion International on private wells. The primary concern, though, would be with surface water contamination because the majority of the residents in Orangeburg depend on it for drinking. However, Middle Penn Creek, which runs through the property, is not hydrologically connected to the North Edisto River which supplies the city of Orangeburg. The surface water intake is approximately 2.5 miles to the southwest.

The Carolina Bays located throughout the Orangeburg area are considered sensitive environments and are home to many types of wildlife therefore are of concern. There is also a potential for onsite or nearby air exposure if the soil is disturbed.

Analyses of samples collected during the field investigation revealed only small concentrations of contaminants. Further, these analytical results did not reveal a direct correlation between the facility operations and the contaminants present. It is recommended that this site be reevaluated under the revised Hazard Ranking System.

1.0 INTRODUCTION

The NUS Corporation Region 4 Field Investigation Team (FIT) was tasked by the U.S. Environmental Protection Agency (EPA), Waste Management Division to conduct a site screening investigation (SSI) at Champion International Corporation in Orangeburg County, South Carolina during the week of May 30, 1988. The investigation was performed under the authority of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The task was performed to satisfy the requirements stated in Technical Directive Document (TDD) number F4-8801-06.

1.1 OBJECTIVE

The objective of this investigation was to characterize any contamination produced by or released at Champion International Corporation through the analyses of environmental soil and water samples.

1.2 SCOPE OF WORK

The scope of this investigation included the following activities:

- Obtain and review relevant background materials
- Obtain information on local water systems
- Evaluate target populations within a 4-mile radius of the site with regard to groundwater and surface water
- Determine location and distance to nearest potable water
- Develop a site sketch drawn to scale
- Collect 13 environmental samples consisting of surface soil, subsurface soil, sediment, and surface water samples

2.0 SITE CHARACTERIZATION

Champion International Corporation is located at the corner of Five Chop Road and Myers Road in Orangeburg, Orangeburg County, South Carolina. Orangeburg is situated in the south-central portion of the state. The 43.5-acre site is on the east side of Five Chop Road. The latitude and longitude of the facility are 33°28′0″ N and 81°13′0″ W, respectively (Ref. 1). Refer to Figures 2-1 and 2-2.

2.1 SITE BACKGROUND AND HISTORY

Champion International Corporation operated alternately under the name of U.S. Plywood. Construction began in 1948 for U.S. Plywood and production began in 1950 or 1951. In the sixties Champion International and U.S. Plywood merged. It remained as such until August of 1985 when it was purchased and again named U.S. Plywood. This facility manufactured plywood during this entire period of time (Ref. 1). Currently, Georgia-Pacific owns the property and has shut down operations at this plant; however, another business, Decolam, Inc., is still in operation on part of the property. Decolam is a vinyl laminating plant owned by former employees of Champion International and presided over by the former vice president and general manager of Champion International (Ref. 2). An offsite reconnaissance was conducted by NUS in January 1988. Figure 2-2 shows the site layout as ascertained by topographic and city maps.

A Notification of Hazardous Waste Activity form was filed on August 15, 1980 and again on November 19, 1980, in order to change the status of Champion International from a facility which treats, stores, and disposes of hazardous waste to one which only generates hazardous waste (Ref. 3). A Notification of Hazardous Waste Site form was filed on June 9, 1981, describing the facility type as a landfill, with organics and solvents as the general type of waste (Ref. 4). As of September 14, 1982, Champion International was listed as an interim status facility (Ref. 5). On October 31, 1983, the South Carolina Department of Health and Environmental Control (SCDHEC) granted Champion approval for the offsite disposal of pesticides and pesticide containers at the Orangeburg County Landfill. The chemicals were stored in 55-gallon drums at the Champion facility until their disposal at the landfill (Ref. 6).

Champion International's disposal practices at the Orangeburg County Landfill were of great concern to SCDHEC in the early 1980s. Unsealed drums were transported to the landfill on several

occasions and leaked liquids onto the ground (Ref. 7). Although this primarily impacts the county landfill, Champion International's disposal practices may have resulted in spills on their own grounds before the transport of the drums.

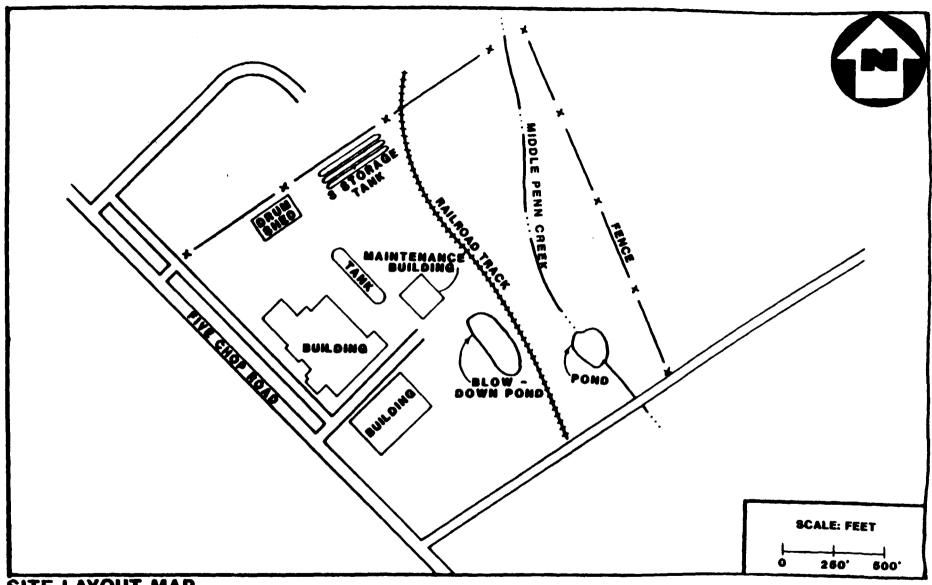
BASE MAP IS A PORTION OF THE U.S.G.S. 7.5 MINUTE QUADRANGLE ORANGEBURG SOUTH, SOUTH CAROLINA, 1982.
SITE LOCATION MAP

CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, SOUTH CAROLINA

FIGURE 2-1



4-



SITE LAYOUT MAP CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

FIGURE 2-2



The one persistent problem with Champion International is a disposal area which is mentioned frequently in the file material. This disposal area is located along the back of the facility. Drums have been disposed of there (Ref. 8).

The first mention of the disposal area in the file material was in 1974. Investigators from the Industrial Waste Section of SCDHEC saw several piles of wood scraps and a few 55-gallon drums. The plant manager stated that cleanup of the area should be finished by the end of that year (Ref. 8). An SCDHEC visit in 1982, however, again noted the presence of drums in the disposal area. The plant manager was instructed to determine what was in the drums. SCDHEC also discovered that the plant was burning cured urea formaldehyde glue sludge in wood/fuel boilers without district air personnel being aware of the practice (Ref. 9).

In 1986, SCDHEC sent a letter to Champion International concerning the old drum site, once again urging an investigation of the matter. The letter also mentioned a cooling water basin located on the property near the dump area which may have used chromate cleaners in its operation. This cooling water basin is shown as the blow down pond in Figure 2-2. As late as May 14, 1987, the corporation had taken no action regarding the questions presented by SCDHEC (Ref. 10).

2.2 SITE DESCRIPTION

2.2.1 Site Features

Champion International encompasses 43.5 acres of land, much of which is overgrown with large trees and brush. The entrance to the facility is on the south side of the property. There is a large building which is presently being used by Decolam, Inc. There are several other abandoned buildings along the front of the property. Against the fence on the northeast side is a drum storage shed. It is a concrete pad with a three-walled building constructed on it. Next to the shed on the north lie three storage tanks which contain methyl ethyl ketone and toluene. They are not constructed on concrete. Towards the back of the property there is a large area that is strewn with scrap metal and concrete. In this area there was supposedly a trench that was filled with drums and then covered over. The entire back of the property is heavily wooded. The Middle Penn Creek runs across the back of the property. There are remnants of a 5-acre log pond that intersected Middle Penn Creek. Presently, there is a blow-down pond on the center of the property that is used for cooling the boiler. Site drainage is to the southwest. The entire property is fenced; therefore, it is not easily accessed by the public. See Figure 2-2 for details.

2.2.2 Waste Characteristics

The Hazardous Waste Facility permit application indicates that acrylic topcoat filler paste, prefinish wash solvents, vinyl wash line solvents, oil and grease, glue pit sludge and water-based paint were disposed of at this facility (Ref. 11). Champion International/U.S. Plywood manufactured plywood. In the early sixties there was a veneer peeling operation being conducted but it was discontinued. This process should not have generated any waste. The waste was generated from veneer gluing and a finishing operation which included sanding and coating the plywood. Before the county of Orangeburg acquired a county dump, much of the garbage and waste was brought to this property. It is not known exactly what types of materials were being dumped during this period of time. It appears that the waste and drums were bulldozed to the back of the property and then buried (Ref. 12).

2.3 ENVIRONMENTAL/REGIONAL SETTING

2.3.1 **Demography**

Champion International is located in the city of Orangeburg. Present population of Orangeburg is 15,000 (Ref. 13). There is a school 500 feet immediately north of the facility (Ref. 14).

2.3.2 Land Use

Land in the study area is used primarily for multi-family residences and small industries. There are wooded areas surrounding the site, also (Ref. 12).

2.3.3 Sensitive Environments

Carolina Bays, undrained shallow depressions with an elliptical or ovate shape, are located throughout the Orangeburg area. These bays are home to many sorts of wildlife and are considered sensitive environments (Ref. 15). The Middle Penn Creek flows through the property. The North Edisto River also flows within 2 miles of the facility (Ref. 14).

2.4 HYDROLOGY

2.4.1 Climatology

Champion International Corporation lies in the Coastal Plain Physiographic Province. The topography of the area is characterized by moderate to high relief ranging from 250 to 420 feet above sea level. The climate is humid and temperate with a mean monthly air temperature of 64.2°F. The mean annual precipitation is 46.37 inches. The mean annual lake evaporation is 43.0 inches, resulting in a net annual recharge of 3.37 inches (Ref. 15).

2.4.2 Overland Drainage and Potentially Affected Water Bodies

Surface water runoff migrates into Middle Penn Creek which is directly behind the facility. Middle Penn Creek becomes a swamp southeast of Orangeburg. The North Edisto River provides the city of Orangeburg with potable water. This river is not connected in any way to Middle Penn Creek or Swamp. The surface water intake lies approximately 2.5 miles southwest of Champion International and serves 16,395 people (Ref. 14). Therefore, the surface water pathway is not considered to be of concern.

2.5 REGIONAL AQUIFER CHARACTERISTICS

Orangeburg, South Carolina is located in south-central South Carolina in the Middle Atlantic Coastal Plain Physiographic Province. The city of Orangeburg lies at the transitional zone between the outcrop areas of the McBean Formation in the Upper Coastal Plain and the Santee Limestone in the Lower Coastal Plain. The quartzose sands, calcareous clays and thin limestone of the McBean Formation interfinger with the fossiliferous, cherty, glauconitic, and dolomitic Santee limestone at this transition zone (Ref. 15). Groundwater flows in a southeasterly direction in the study area (Ref. 16).

This zone is overlain with Pleistocene deposits of silt, sand, clay and gravel, and underlain in descending order, by the Black Mingo, Peedee, Black Creek, and Middendorf aquifer systems. The surficial Pleistocene aquifer, along with the Santee and the McBean aquifers of Tertiary age, are unconfined aquifers in the Orangeburg area, with water levels of approximately 40 feet below land surface (bls) (Ref. 15). These aquifers are separated from the underlying aquifers by confining layers of shale and clay in the upper part of the Black Mingo formation (Ref. 14). The Black Mingo, Peedee, Black Creek, and Middendorf are all confined aquifers in this area.

The Pleistocene deposits of silt, sand, clay and gravel are from 50 to 120 feet thick in the Orangeburg area. There are some private wells tapping this aquifer; but, due to the high content of iron in the water at this depth, the number of wells is low (Ref. 15).

The Santee Limestone of the Tertiary Limestone aquifer system is first encountered at 50 to 120 feet bls (Ref. 13). This formation has developed a secondary porosity from the enlargement of fractures and joints through dissolution of limestone by the water contained in the aquifer. Fissures, sinkholes and subterranean passageways in the porous limestone are infiltrated by rainfall during the recharge process, making it a very productive system (Ref. 16).

The McBean Formation is part of the Tertiary Sand aquifer system and consists of quartzose sands interbedded with clays. Both the McBean and the Santee occur at or near the land surface and are tapped by wells with depths of approximately 90 to 300 feet (Refs. 13, 14, 15).

The nearest well is 1.75 miles from Champion International and there are approximately 20 residences using groundwater within 4 miles of the site. These wells are used primarily for drinking (Ref. 18).

3.0 TARGET ANALYSIS

3.1 GROUNDWATER POTENTIAL

Groundwater may have been contaminated by this site because drums were used to store contaminants from the facility and these drums were carelessly sealed and many have rusted so much that they may no longer be containing the waste (Ref. 12). The majority of the residences in Orangeburg use municipal water which is obtained from the North Edisto River. Approximately 20 residences in the 4 mile radius use private wells for their drinking water (Ref. 18).

3.2 SURFACE WATER POTENTIAL

There is high potential for surface water contamination of Middle Penn Creek which flows through the property. Further southeast of Orangeburg, the creek becomes a swamp. This swamp, along with the Carolina Bays in the area, are considered to be sensitive environments. The North Edisto River, which supplies the municipal system in Orangeburg, is not hydrologically connected to Middle Penn Creek (Refs. 14, 19). Therefore, this surface water pathway is not considered to be of concern.

3.3 ONSITE EXPOSURE POTENTIAL

Champion International is a completely fenced facility; therefore, direct contact would be a hazard to employees but not the general public (Ref. 12).

3.4 AIR POTENTIAL

Airborne contamination is possible because surface soils were found to be contaminated. Contaminated dust particles may be transported from the site in moderate to strong gusts of wind.

TABLE 3-1

TARGET SUMMARY CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

PATHWAY	TARGET ANALYSIS	COMMENTS
Surface Water	Middle Penn Creek, Carolina Bays.	Fishing and recreational use of creek. Bays are considered sensitive environments.
Groundwater	Residents with private wells.	Approximately 20 residents within 4 miles of the facility.
Air	Onsite workers and residents in the surrounding areas.	Dust particles being disturbed.

4.0 FIELD INVESTIGATION

The field sampling investigation was conducted the week of May 30, 1988 to identify the absence or presence of contaminants in the environment as a result of activities at the Champion International facility. A geophysical investigation was first conducted to aid in the selection of sample locations. Thirteen samples were taken. Due to the limited number of groundwater targets, no groundwater samples were collected. The samples were analyzed for the complete Hazardous Substance List (HSL) of compounds which includes metals, cyanide, PCBs, pesticides, and extractable and purgeable organic compounds. All sample analyses were performed under the EPA Contract Laboratory Program (CLP).

4.1 GEOPHYSICAL INVESTIGATION

A geophysical investigation was conducted at Champion International on June 2, 1988. The study had one objective: to aid in the selection of locations for the collection of subsurface soil samples.

Three non-parallel lines were marked at 25-foot centers and surveyed with an EM31D non-contacting terrain conductivity meter. All three lines were located north of the Seaboard Coast railroad tracks situated near the Champion International loading zone. Prior to the survey, the electromagnetometer was calibrated according to standard operating procedures. Background conductivity values were recorded in field logbook number F4-891. It was not possible to create a grid for the survey. The ground was cluttered with metallic debris and assorted building materials. Therefore, three lines were shot in areas where a line could be laid between scrap piles. As a result, conductivity was measured along three randomly-oriented lines located along the northern perimeter of the facility.

Background conductivity values had an averaged value of 17 mmhos/m. Values for lines 1 and 2 ranged from 20 to 111 mmhos/m. Some of the values of line 3 were greater than 150 mmhos/m. Since all three lines shot were near or through piles of waste metal, it is difficult to explain why the western end of line 3 had anomalous values. Furthermore, the absence of tie lines or adjacent lines suggests that the data collected for this investigation is inconclusive and unreliable. Therefore, this investigation did not aid in the choice of sample locations.

4.2 DESCRIPTION OF SAMPLES AND SAMPLE LOCATIONS

A total of four surface soil samples were collected during this investigation. Sample locations are shown in Figure 4-1, and sample descriptions are given in Table 4-1. One of the surface soil samples (CI-SS-01) was located at the front southeast corner of the property to characterize the background conditions. The second surface soil was a composite soil (CI-CS-02) and was taken in four areas surrounding the drum storage shed. A third surface soil (CI-SS-03) was taken at the maintenance building where some discolored soil was observed. The last surface soil sample (CI-SS-04) was collected on the back of the property in the woods where partially buried drums lay.

Additionally, three subsurface soil samples were collected during this investigation. A background sample (CI-SB-01) was taken at the front southeast corner of the property. A second subsurface soil (CI-SB-02) was taken on the back of the property downgradient from the buried drums. The third subsurface soil sample (CI-SB-03) was taken at the maintenance building. The subsurface soil samples were all taken at approximately 3 feet below land surface (bls).

During the investigation, three sediment samples were taken. A background sample (CI-SD-01) was taken upgradient on the Middle Penn Creek. There is a blow-down pond located on the property, and the second sediment sample (CI-SD-02) was taken there. The third (CI-SD-03) was collected downgradient on the Middle Penn Creek.

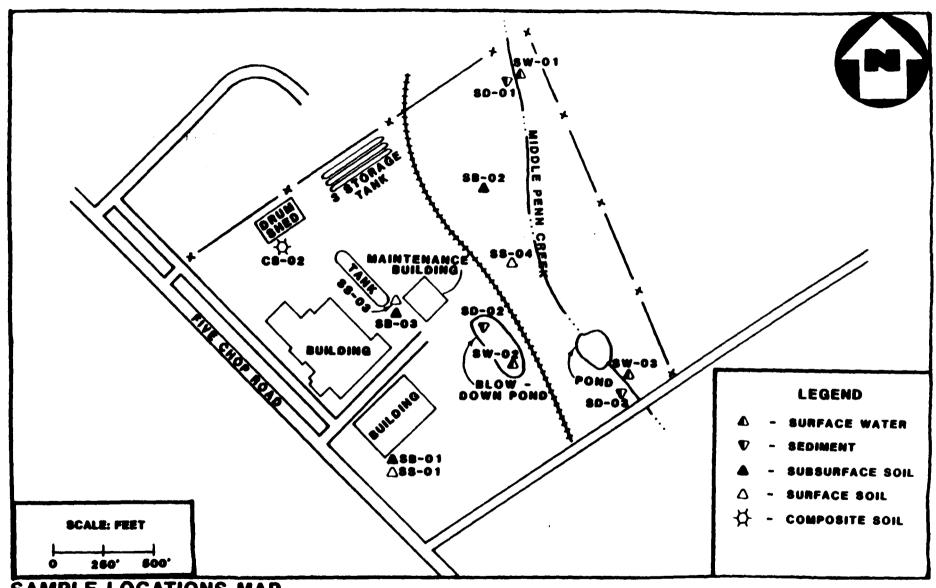
Three surface water samples (CI-SW-01, CI-SW-02, CI-SW-03) were collected at the same locations as the sediment samples. No groundwater samples were taken at Champion International Corporation due to the lack of substantial groundwater targets in the study area.

4.3 SPLIT SAMPLES

Split samples were offered to Mr. Thomas Stevens of Georgia Pacific Corporation and he declined the offer. A receipt for samples form with his signature is on file at the NUS FIT 4 office.

4.4 FIELD MEASUREMENTS

Field measurements were recorded for the surface water samples. Included were temperature of sample at time of collection, pH, and conductivity. No field measurements were performed on the soil samples during the investigation. The field measurements are presented in Table 4-1.



SAMPLE LOCATIONS MAP CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

FIGURE 4-1



SAMPLE LOCATION STATIONS & FIELD MEASUREMENTS
CHAMPION INTERNATIONAL CORPORATION
ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

TABLE 4-1

Sample Codes	Description/Location	Date 1988	Time	рН	Temp (°C)	Conductivity (umhos/cm)
CI-SS-01	Surface soil sample taken at front southeast corner of the site. This sample was utilized as a background sample.	6/2	1015	-	-	-
CI-SB-01	Subsurface soil sample collected on southeast corner of site at approximately 3 feet bls. This sample was utilized as a background sample.	6/2	1025	-	-	-
CI-SW-01	Surface water sample taken upgradient in Middle Penn Creek on site. This sample was utilized as a background sample.	6/2	1020	6.9	31	150
CI-SD-01	Sediment sample taken upgradient in Middle Penn Creek on site. This sample was utilized as a background sample.	6/2	1025	-	•	-
CI-CS-02	Composite soil sample taken on northern side on site at drum storage area.	6/2	1045	-		-
CI-SW-02	Surface water sample taken at center of site in the blow-down pond.	6/2	1150	9.5	32	1900
CI-SD-02	Sediment sample collected at center of site in the blow-down pond.	6/2	1155	-	-	-
CI-SB-02	Subsurface soil sample collected on northeast portion of site in the woods at approximately 3 feet bls.	6/2	1215	•	-	-

⁻ No measurements taken

4.5 ANALYTICAL SUPPORT

Analytical services for the environmental soil and water samples collected were provided by consulting laboratories as a part of the EPA Contract Laboratory Program (CLP). Organic analysis of both water and soil samples was conducted by Compuchem Laboratories, Research Triangle Park, North Carolina. In organic analysis of the water and soil samples was conducted by Keystone Environmental Resources, Houston, Texas.

4.6 PRESENTATION OF ANALYTICAL RESULTS

The following sections present a discussion of laboratory analysis performed on samples collected during the field investigation. The results of the organic and inorganic analyses for surface soil samples are given in Tables 4-2 and 4-3. The inorganic analysis for subsurface soil samples is presented in Table 4-4. The laboratory results for the sediments samples are shown in Tables 4-5 and 4-6. The organic and inorganic results for surface water samples are given in Tables 4-7 and 4-8.

4.6.1 Soil Samples

The background surface soil and subsurface soil samples, CI-SS-01 and CI-SB-01, contained no contaminants. One onsite composite surface soil sample (CI-CS-02) contained substantial levels of 16 poly-nuclear aromatic hydrocarbons. Also present in the organic analytical results for CI-CS-02 were three phthalate compounds, pentachlorophenol, and dibenzofuran. The compounds present in CI-SS-03 were fluoranthene, pyrene, and di-n-octylphthalate. Sample CI-SS-04 contained fluoranthene, pyrene, bis (z-ethylhexyl) phthalate, and chrysene. The three subsurface soil samples (CI-SB-01, CI-SB-02, CI-SB-03) contained no organic contaminants.

The inorganic analyses of surface soil samples detected barium, chromium, copper, lead, magnesium, and nickel at levels higher than those in the background sample. Zinc concentrations were found in CI-CS-02 and CI-SS-04. A level of 5.5 ug/L of arsenic was present in CI-CS-02, also. The inorganic analysis of subsurface soil samples showed no elevated levels of contaminants when compared with the background sample. A summary of organic and inorganic soil contaminants is listed in Tables 4-2, 4-3, and 4-4.

TABLE 4-2

SUMMARY OF ORGANIC ANALYTICAL RESULTS SOIL SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

Parameters (ug/L)	Background	Onsite			
rarameters (ug/L)	CI-SS-01	CI-CS-02	CL-SS-03	CI-SS-04	
Purgeable Compounds					
Methylene Chloride	-	-	-	-	
Toluene	-	-			
Acetone	-	•	-	-	
Extractable Compounds					
Naphthalene	·	830J	-	-	
Acenaphthene	-	7 6 0J	-	-	
Fluorene	-	7 6 0J		-	
Phenanthrene	-	7000	-	-	
Anthracene	-	1400J	-	-	
DI-N-Butylphthalate	-	460J	-	-	
Fluoranthene	-	10,000	1 8 0J	67J	
Pyrene	-	6100	190J	53J	
BIS (2-Ethylhexyl) Phthalate	-	90,000	-	5100	
Benzo (A) Anthracene	-	4100	-	-	
Chrysene	-	4700	-	561	
DI-N-Octylphthalate	-	840J	680J	-	
Benzo (B and/or K) Fluoranthene	-	8400J	-	-	
Benzo-A-Pyrene	-	3300	-		
Indeno (1, 2, 3-CD) Pyrene	-	1800J	-	-	
Dibenzo (A,H) Anthracene	-	8001	-	-	
Benzo (GHI) Perylene	-	1800J	-		

- J Estimated Value
- N Presumptive Evidence of Presence of Material
- Material analyzed for but not detected

TABLE 4-2

SUMMARY OF ORGANIC ANALYTICAL RESULTS SOIL SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

David State (1)	Background	Onsite			
Parameters (ug/L)	CI-SS-01	CI-CS-02	CL-SS-03	CI-SS-04	
Pentachlorophenol, PCP, Penta	•	9500	-	-	
Benzoic Acid	-	-	•	250J	
4-Methylphenol	-	-	•	-	
Dibenzofuran	-	460J	-	-	
(3-and/or 4-) Methylphenol	-	-	-	-	
2-Methylnaphthalene	-	370J	-	-	
Carbazole	•	400JN	-		
Benzofluoranthene (Not B or K)	-	3000JN	-	-	
Bromohexane	-	-	-	800JN	
Pentacosane		-	-	10,000JN	
N-Nitrosodiphenylamine/Diphenylamine	-	•		-	
Petroleum Product	-	•	N	-	
Unidentified Compounds/No.	•	40,000J/13	10,000J/8	20,000J/17	
Pesticide/PCB Compounds					
Dieldrin	-	72	-	-	

J Estimated Value

N Presumptive Evidence of Presence of Material

- Material analyzed for but not detected

TABLE 4-3

SUMMARY OF INORGANIC ANALYTICAL RESULTS SOIL SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

	Background	Onsite		
Parameters (mg/kg)	CI-SS-01	CI-CS-02	CI-SS-03	CI-SS-04
Aluminum	2700	4200	4700	3100
Antimony	-	•		<u>-</u>
Arsenic	0.81JN	6.7JN	2.8JN	3JN
Barium	30	160	70	100
Beryllium	-	-	-	-
Cadmium	-	2.6	-	-
Calcium	720	1400	1100	1700
Chromium	4.7	36	8.7	78
Cobalt	-	-		4.5
Copper	-	6.21	2.31	6.4)
Iron	2700	11,000	5400	4300
Lead	13J	55J	14J	29J
Magnesium	120J	260J	200	180
Manganese	43J	81	37J	140J
Mercury	-	-	-	-
Nickel	-	-	-	23
Potassium	-	-	- 1	-
Selenium	•	-	-	-
Silver	-	-	-	•
Sodium	•	•	-	-
Thallium	•		-	-
Tin	NA	NA	NA	NA
Vanadium	7.9	16	12	8.5
Zinc	-	240J	-	88J
Cyanide	•	5.5		•

J Estimated Value

N Presumptive Evidence of Presence of Material

Material analyzed for but not detected

NA Not analyzed

SUMMARY OF INORGANIC AND ORGANIC ANALYTICAL RESULTS SUBSURFACE SOIL SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

	Background	Onsite	
Parameters (mg/kg)	CI-SB-01	CI-SB-02	CI-SB-03
Aluminum	13,000	5600	6900
Antimony	-		-
Arsenic	9.8JN	6.7JN	1.6JN
Barium	10	8.7	9.6
Beryllium		-	-
Cadmium	-	•	•
Calcium	420	•	•
Chromium	16	-	8.2
Cobalt		-	
Copper	•	-	-
Iron	17,000	6000	5500
Lead	6.5J	2. 9 J	3.7J
Magnesium	140J	-	78
Manganese	-	-	-
Mercury	-	_	-
Nickel		•	-
Potassium	•	-	<u>-</u>
Selenium	-	<u>-</u>	•
Silver	-	-	<u>-</u>
Sodium	•	-	-
Thallium	•	-	-
Tin	NA	NA	NA
Vanadium	41	16	19
Zinc	-	-	-
Cyanide	-	-	-

J Estimated Value

N Presumptive Evidence of Presence of Material

Material analyzed for but not detected

NA Not analyzed

* No organic compounds were detected in subsurface soil samples

TABLE 4-5

SUMMARY OF ORGANIC ANALYTICAL RESULTS SEDIMENT SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

Purgeable Compounds			
	1		
Methylene Chloride	-	-	<u>-</u>
Toluene	-	-	-
Acetone	-	•	-
Extractable Compounds			
Naphthalene	-	-	-
Acenaphthene	-	-	<u>-</u>
Fluorene	-	-	-
Phenanthrene	-	-	-
Anthracene	-	-	-
DI-N-Butylphthalate	-	-	-
Fluoranthene	45J	•	-
Pyrene	-	-	-
BIS (2-Ethylhexyl) Phthalate	-	-	-
Benzo (A) Anthracene	-	•	-
Chrysene	-	-	-
DI-N-Octylphthalate	-	•	-
Benzo (B and/or K) Fluoranthene	•	-	-
Benzo-A-Pyrene		-	-
Indeno (1, 2, 3-CD) Pyrene	-	•	-
Dibenzo (A,H) Anthracene	-	-	-
Benzo (GHI) Perylene	-	-	-
Pentachlorophenol,	-	•	-
Benzoic Acid	-	•	-
4-Methylphenol	-	•	-
Dibenzofuran		-	-

- J Estimated Value
- N Presumptive Evidence of Presence of Material
- Material analyzed for but not detected

TABLE 4-5

SUMMARY OF ORGANIC ANALYTICAL RESULTS SEDIMENT SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

Parameters (ug/L)	CI-SD-01	CI-SD-02	CI-SD-03
(3-and/or 4-) Methylphenol	-	63)	•
2-Methylnaphthalene	-	-	-
Carbazole	-		-
Benzofluoranthene (Not B or K)	-	-	-
Bromohexane	-	1000JN	6001N
Pentacosane	-	<u>-</u>	-
N-Nitrosodiphenylamine/Diphenylamine	-	-	-
Petroleum Product	-	-	-
Unidentified Compounds/No.	-	20000J/11	500J/1
Pesticide/PCB Compounds			
Dieldrin	•	-	

- J Estimated Value
- N Presumptive Evidence of Presence of Material
- Material analyzed for but not detected

TABLE 4-6

SUMMARY OF INORGANIC ANALYTICAL RESULTS SEDIMENT SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

Parameters (mg/kg)	CI-SD-01	CI-SD-02	CI-SD-03
Aluminum	380	820	450
Antimony	-	-	-
Arsenic	-		-
Barium	-	19	-
Beryllium	~	-	-
Cadmium	•		-
Calcium	-	-	-
Chromium	2.7	-	-
Cobalt	-	-	-
Copper	11	•	-
Iron	460	1200	660
Lead	1.6J	2.3J	31
Magnesium	•	64	•
Manganese	-	10	-
Mercury	-	-	-
Nickel	-	-	-
Potassium	-	-	-
Selenium	-	-	-
Silver	•	•	-
Sodium	<u>-</u>	•	-
Thallium	<u>-</u>	-	-
Tin	NA	NA	NA
Vanadium	-	3.7	-
Zinc	-	-	-
Cyanide	-	-	-

J Estimated Value

N Presumptive Evidence of Presence of Material

- Material analyzed for but not detected

TABLE 4-7

SUMMARY OF ORGANIC ANALYTICAL RESULTS SURFACE WATER SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

Parameters (ug/L)	CI-SW-01	CI-SW-02	CI-SW-03
Purgeable Compounds			
Methylene Chloride		-	-
Toluene		-	-
Acetone	-	-	-
Extractable Compounds			
Naphthalene	-	-	-
Acenaphthene	-	_	-
Fluorene	-	-	-
Phenanthrene	-	-	-
Anthracene	-	-	-
DI-N-Butylphthalate	-	31	-
Fluoranthene	-	-	
Pyrene	-	-	-
BIS (2-Ethylhexyl) Phthalate	-	-	-
Benzo (A) Anthracene	-	-	-
Chrysene	-	-	-
DI-N-Octylphthalate	-	-	
Benzo (B and/or K) Fluoranthene	-	-	-
Benzo-A-Pyrene	-	-	-
Indeno (1, 2, 3-CD) Pyrene	-	•	-
Dibenzo (A,H) Anthracene		•	-
Benzo (GHI) Perylene	-	•	-
Pentachlorophenol		-	-
Benzoic Acid	-	-	-
4-Methylphenol	-	-	-
Dibenzofuran	-	-	-

- J Estimated value
- N Presumptive evidence of presence of material
- Material analyzed for but not detected

TABLE 4-7

SUMMARY OF ORGANIC ANALYTICAL RESULTS SURFACE WATER SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

Parameters (ug/L)	CI-SW-01	CI-SW-02	CI-SW-03
(3-and/or 4-) Methylphenol	-	•	-
2-Methylnaphthalene	-	-	-
Carbazole	-	-	
Benzofluoranthene (Not B or K)		-	-
Bromohexane	-	-	
Pentacosane	-	-	-
N-Nitrosodiphenylamine/Diphenylamine	-	31	-
Petroleum Product		-	-
Unidentified Compounds/No.	-	-	-
Pesticide/PCB Compounds			
Dieldrin	-	•	-

- Estimated value
- Presumptive evidence of presence of material Material analyzed for but not detected Ν

TABLE 4-8

SUMMARY OF INORGANIC ANALYTICAL RESULTS SURFACE WATER SAMPLES CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, ORANGEBURG COUNTY, SOUTH CAROLINA

Parameters (mg/kg)	CI-SW-01	CI-SW-02	CI-SW-03
Aluminum	•	5300	-
Antimony	-		-
Arsenic	-	7JN	-
Barium	30	190	30
Beryllium	-	-	-
Cadmium	-	-	•
Calcium	23000	30000	23000
Chromium	-	•	-
Cobalt	•	•	-
Copper	-	-	-
Iron	1000J	2900J	950J
Lead	-	-	-
Magnesium	1800	3000	2000
Manganese	26	130	26
Mercury	-	-	•
Nickel	•	-	-
Potassium	2400	96000	2700
Selenium	_	-	<u>-</u>
Silver	-	-	-
Sodium	8900	440000	8600
Thallium	-	-	-
Tin	NA	NA	NA
Vanadium	•	2.2	-
Zinc	-	-	-
Cyanide	-	-	-

J - Estimated Value

N - Presumptive Evidence of Presence of Material

- Material analyzed for but not detected

4.6.2 <u>Sediment Samples</u>

The only thing revealed in the organic analyses for sediment samples was the detection of an estimated 63 ug/L of methylphenol in sample CI-SD-02.

In the inorganic analyses, iron, and lead were found in small concentrations in the three sediment samples. Sample CI-SD-02 also showed levels of barium, manganese, magnesium, and vanadium which were all above background. A summary of organic and inorganic soil contaminants are listed in Tables 4-5 and 4-6.

4.6.3 Surface Water Samples

Two organic compounds were detected in the surface water at Champion International. These were Di-n-butylphthalate and n-nitrosodiphenylamine/diphenylamine and were found in sample CI-SW-02. Both were found at estimated concentrations of 3 ug/L.

Several inorganic compounds were found in sample SW-02 in concentrations higher than those of background. These included aluminum, barium, calcium, iron, magnesium, manganese, potassium, and vanadium. Magnesium and potassium were the only compounds with elevated levels in Sample CI-SW-03. Summaries of the organic and inorganic surface water contaminants are listed in Tables 4-7 and 4-8.

4.7 ANALYTICAL DATA QUALITY

All analytical data were subjected to a quality assurance/quality control (QA/QC) review as described in the EPA Environmental Services Division Laboratory Data Evaluation Guidelines. Data reported above minimum detection limits have been compiled and are presented in Tables 4-2 through 4-8. The complete analytical data sheets are provided in Appendix A. As shown in the summary tables, some of the organic and inorganic parameters were assigned estimated concentrations. This means that the qualitative analysis was acceptable, but the reported concentration should not be considered accurate. A few other parameters were noted as being detected based on the presumptive evidence of presence of the material. This means that the compound was tentatively identified, and its detection cannot be used as a positive identification as to its presence. Some of the data have been determined to be invalid according to QA/QC procedures. Invalid data was not

used in this report. Resampling and analysis would be necessary to confirm the results of all invalid data.

4.8 METHODOLOGY

All sample collection, sample preservation, and chain-of-custody procedures used during this investigation will be in accordance with the standard operating procedures as specified in Section 3 and 4 of the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual; United States Environmental Protection Agency, Region IV, Environmental Services Division, April 1, 1986.

All laboratory analyses and laboratory quality assurance procedures used during this investigation were in accordance with standard procedures and protocols as specified in the <u>Analytical Support</u> <u>Branch Operations and Quality Assurance Manual</u>; United States Environmental Protection Agency, Region IV, Environmental Services Division; revised April 1, 1986 or as specified by the existing United States Environmental Protection Agency standard procedures and protocols for the contract analytical laboratory program.

5.0 SUMMARY

The sampling investigation of Champion International Corporation consisted of collection and chemical analysis of 13 environmental samples including surface soil, subsurface soil, sediment, and surface water. Groundwater samples were not taken because no downgradient wells were available, and there were not enough significant targets to warrant installation of temporary wells.

The study revealed that there are some elevated levels of organic and inorganic compounds present on site, especially around the drum storage area. The organics that were found are indicative of coal tar creosote and could have come from a number of sources. The phthalates that were found were probably constituents of the formaldehyde glue sludge that was recorded as being present on site. There were inorganic contaminant levels above background in all the samples, but these could be naturally occurring.

The city of Orangeburg gets water from the North Edisto River and the surface water intake lies 2.5 miles from the site. There are a few residents with private wells surrounding Champion International, but it is believed to be approximately 20. There would be concern about the Middle Penn Creek and Carolina Bays but analytical data does not warrant such a concern.

Based on the results of this investigation, FIT recommends that Champion International Corporation be reevaluated under the revised Hazard Ranking System.

REFERENCES

- 1. Ozzie Fogle, Manager, Decolam, Inc. Telephone conversation with Teresa Sawyer, NUS Corporation, December 12, 1988. Subject: Chronological History and manufacturing process.
- James M. Burckhalter, Environmental Quality Manager, Aiken Environmental Quality Control (EQC), memo to Jerri Higgins, Geologist, NUS Corporation, March 9, 1988. Subject: Current status of Champion International Corporation.
- 3. EPA Notification of Hazardous Waste Activity (EPA Form 8700-12) for Champion International Corporation, Orangeburg, S.C. filed by Fred Rigden, previous Operations Manager, August 15, 1980.
- 4. EPA Notification of Hazardous Waste Site (EPA form 2000-01) for Champion International Corporation, filed by Richard C. Wigger, former Vice President.
- 5. Potential Hazardous Waste Site Preliminary Assessment (EPA form 2070-2), filed by Debbie Browning, September 14, 1982.
- 6. J. Rick Grant, Waste Engineering Section of the Bureau of Solid and Hazardous Waste, Columbia, S.C., Letter to Kurt J. Penny, Champion International Corporation, October 31, 1983. Subject: Disposal approval with conditions.
- 7. James M. Burckhalter, Environmental Quality Manager, Aiken Environmental Quality Control (EQC), Columbia, S.C., Letter to Ozzie Fogle, Manager, Champion International Corporation, August 27, 1981. Subject: Problems with disposal practices at Champion International Corporation.
- 8. Randall E. French, Industrial Solid Waste Consultant, interoffice memorandum to Charles M. Kelly, Manager, Industrial Waste Section, South Carolina Department of Health and Environmental Control, September 17, 1974. Subject: Inspection of closed dump at Champion International.
- 9. James M. Burckhalter, Environmental Quality Manager, Aiken Environmental Quality Control (EQC), memorandum to Ed Gibson, South Carolina Department of Health and Environmental Control, June 21, 1982. Subject: Interim Status Inspection.
- 10. James M. Burckhalter, Environmental Quality Manager, Aiken Environmental Quality Control (EQC), memo to John Cain, Solid and Hazardous Waste Division, South Carolina Department of Health and Environmental Control, May 14, 1987. Subject: Cover letter for references.
- 11. Hazardous Waste Facility Permit application, for Champion International Corporation, Orangeburg, S.C., South Carolina Department of Health and Environmental Control, filed by Ron D. Presley, past owner, September 9, 1980.
- 12. NUS Corporation Field Logbook No. F4-865 for Champion International Corporation, TDD No. F4-8801-06. Documentation for Site Screening Investigation, June 1-2, 1988.
- 13. Clerk, City Hall of Orangeburg, S.C., telephone conversation with Teresa Sawyer, NUS Corporation, August 30, 1988. Subject: Population of Orangeburg, S.C.

- 14. U.S. Geological Survey, 7.5 minute series Topographic Quadrangle Map of South Carolina, Orangeburg South 1982.
- 15. Thomas F. Berry, owner, Berry Drilling Company. Telephone conversation with Jerri Higgins, NUS Corporation, March 23, 1988. Subject: Aquifers and depth to water table in Orangeburg, S.C.
- 16. George E. Siple, <u>Groundwater Resources of Orangeburg County, South Carolina</u>, Bulletin No. 36, South Carolina State Development Board, 1975.
- G.W. Ackerman, owner, Ackerman-Carolina Drilling Company. Telephone conversation with Jerri Higgins, NUS Corporation, March 24, 1988. Subject: Depth to water table in Orangeburg, S.C.
- 18. NUS Corporation Field Logbook No. F4-623 for Champion International Corporation, TDD No. F4-8801-06. Documentation of facility reconnaissance, January 13, 1988.
- 19. Michael Sells, City of Orangeburg Water Department. Telephone conversation with Teresa Sawyer, NUS Corporation, September 15, 1988. Subject: Number of water connections.

JAN 0 4 1989 FARE 1

HAZARD FANKING SYSTEM SCORING SUMMARY

FOR

CHAMPION INTERNATIONAL CORPORATION
EPA SITE NUMBER SCD003342177
ORANGEBURG
ORANGEBURG COUNTY, SC
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY Teresa Sawyer OF NUS CORPORATION ON 12/13/88

DATE OF THIS REPORT: 12/13/88
DATE OF LAST MODIFICATION: 12/13/88

GROUND WATER ROUTE SCORE: 19.62
SURFACE WATER ROUTE SCORE: 9.79
AIR ROUTE SCORE: 0.00

MIGRATION SCORE : 12.68

HRS GROUND WATER ROUTE SCORE

	CATEGORY/FACTOR	RAW DATA	ABN	. VALUE	SCORE
1.	OBSERVED RELEASE	NO	, spelder to the common	0	Ó
<u> </u>	ROUTE CHARACTERISTICS				
	DEFTH TO WATER TABLE DEFTH TO BOTTOM OF WASTE	40 F 6 F	EET		
	DEPTH TO AQUIFER OF CONCERN	34 F	EET	2	ių.
	PRECIPITATION EVAPORATION	46.4 I 43.0 I			
	NET PRECIPITATION	3.4 I	NCHES	1	1.
	PERMEABILITY	1.0X10-4 C	M/SEC	2	2
	PHYSICAL STATE			3	3
	TOTAL ROUTE CHARACTERISTICS S	BCORE:			10
3.	CONTAINMENT			3	3
4.	WASTE CHARACTERISTICS	, , , , , , , , , , , , , , , , , , ,	,,,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	TOXICITY/PERSISTENCE:PENTACHL	_OROPHENOL			19
	WASTE QUANTITY CUBIC YDS DRUMS GALLONS TONS	0 10000 0 0			
	TOTAL	2500 C	U. YDS	7	7
	TOTAL WASTE CHARACTERISTICS S	SCORE:			25
5.	TARGETS				
	GROUND TER USE			3	9
	DISTANCE TO NEAREST WELL AND TOTAL POPULATION SERVED NUMBER OF HOUSES NUMBER OF PERSONS NUMBER OF CONNECTIONS NUMBER OF IRRIGATED ACRES	9240 F MATRIX VAL 76 P 20 0 0		6	6
	TOTAL TARGETS SCORE:				1.5

HRS SURFACE WATER ROUTE SCORE

	CATEGORY/FACTOR	RAW DATA	AS AS	N. VALUE	SCORE
1	OBSERVED RELEASE	NO	- #*****	()	()
2 ,	ROUTE CHARACTERISTICS			Marie 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 - 1971 -	
	SITE LOCATED IN SURFACE WATER SITE WITHIN CLOSED BASIN FACILITY SLOPE INTERVENING SLOPE	ND NO 2.5 2.5		o.	Ó
	24-HOUR RAINFALL	3.5	INCHES	3	**************************************
	DISTANCE TO DOWN-SLOPE WATER	0	FEET	3	fair Sairt
	PHYSICAL STATE		3		3
	TOTAL ROUTE CHARACTERISTICS SC	ORE:			12
Э.	CONTAINMENT	era en	3		3
4.	WASTE CHARACTERISTICS		and apply Pri Million to the speak of Principles (A)	AND AND THE PROPERTY OF THE PR	
	TOXICITY/PERSISTENCE:PENTACHLO	ROPHENOL			1.8
	WASTE QUANTITY CUBIC YDS DRUMS GALLONS TONS	0 10000 0 0			
	TOTAL	2500	CU. YDS	7	7
	TOTAL WASTE CHARACTERISTICS SC	ORE:			25
5.	TARGETS	n a contra priminggarde de la cipaga grante de la ciba			74 <u>(1864) (1864) (18</u> 64) (186
	SURFACE WATER USE			1	3
	DISTANCE TO SENSITIVE ENVIRONM COASTAL WETLANDS FREST WATER WETLANDS CRITICAL HABITAT	ENTS NONE 2000 2000		5	4
	DISTANCE TO STATIC WATER DISTANCE TO WATER SUPPLY INTAKE AND TOTAL POPULATION SERVED NUMBER OF HOUSES NUMBER OF PERSONS NUMBER OF CONNECTIONS NUMBER OF IRRIGATED ACRES	> 3 E 13190 MATRIX VA O O O O	FEET	0	0
	TOTAL TARGETS SCORE:				7

HRS AIR ROUTE SCORE

CATEGORY	/FACTOR	RAW DATA	ASM. VALUE	SCORE
1. OBSERVED		NO NO	ਂ	Ü

2. WASTE DIAFACTERISTICS

REACTIVITY

MATRIX VALUE

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY CUBIC YARDS

DRUMS GALLONS TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE:

NZA

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS

- 0 to 0.25 mile
- 0 to 0.50 mile
- 0 to 1.0 mile
- O to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS COASTAL WETLANDS FRESH-WATER WETLANDS CRITICAL HABITAT

DISTANCE TO LAND USES
COMMERCIAL/INDUSTRIAL
PARK/FOREST/RESIDENTIAL
AGRICULTURAL LAND
PRIME FARMLAND
HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE:

NZA

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS FOR

SITE: CHAMPION INTERNATIONAL CORPORATION AS OF 12/13/88

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS 10
CONTAINMENT X 3
WASTS CHARACTERISTICS X 25
TARGETS X 15

= $11250 / 57,330 \times 100 = 19.62 = 9_{90}$

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS 12
CONTAINMENT X 3
WASTE CHARACTERISTICS X 25
TARGETS X 7

= 6300 /64,350 X 100 = 9.79 = 8...

AIR ROUTE SCORE

OBSERVED RELEASE 0 /35,100 X 100 = 0.00 = S_{atr}

SUMMARY OF MIGRATION SCORE CALCULATIONS

	<u> </u>	<u></u>
GROUND WATER ROUTE SCORE (S.)	19.62	384.94
SURFACE WATER ROUTE SCORE (S)	9.79	95.84
AIR ROSTE SCORE (S)	0.00	0.00
ੂਰੇ ਤਿੰਦੂ + 5ਵਿੱਛ + ਤਿੰਦੇ _{ਕੈਨਿਆ}		480.78
√ (Segw + Semm + Semmin)		21.93
$S_{M} = -J (S_{QW}^{2} + S_{QW}^{2} + S_{WW}^{2})/1.73$		12.68

HAZARD RANKING SYSTEM SCORING SUMMARY

FOR

CHAMPION INTERNATIONAL CORPORATION
EPA SITE NUMBER SCD003342177
ORANGEBURG
ORANGEBURG COUNTY, SC
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY Teresa Sawyer OF NUS CORPORATION ON 12/13/88

DATE OF THIS REPORT: 12/13/88
DATE OF LAST MODIFICATION: 12/13/88

GROUND WATER ROUTE SCORE: 15.70 SURFACE WATER ROUTE SCORE: 7.83 AIR ROUTE SCORE: 0.00

MIGRATION SCORE : 10.14



HRS GROUND WATER ROUTE SCORE

	CATEGORY/FACTOR		RAW DAT	A	ASN. VALUE	SCORE
1.	OBSERVED RELEASE		NO	****	()	(_)
Ö.	ROUTE CHARACTERI	STICS		yan ay ri 60 Millionen (12 ga ga) 61 - Fl. Se en ey den		get i ti a tung ngganggapa di tiran mi a mingga nagag bira ti
	DEPTH TO WATER TO DEPTH TO BOTTOM			FEET		
	DEPTH TO AQUIFER	OF CONCERN	34	FEET	/	4
	PRECIPITATION EVAPORATION			INCHES INCHES		
	NET PRECIPITATION	M	3,4	INCHES	1	1
	PERMEABILITY		1.0X10-4	CM/SEC	2	2
	PHYSICAL STATE				3	3
	TOTAL ROUTE CHARA	ACTERISTICS S	SCORE:			10
3.	CONTAINMENT	* ()	14 de 19 (19 14 de 14 de 14 e 15		3	3
4.	WASTE CHARACTER!	STICS				
	TOXICITY/FERSISTE	ENCE:PENTACHL	OROPHENOL			18
	Ι	CUBIC YDS DRUMS GALLONS TONS	0 200 0 0			
	-	TOTAL	50	CU. YD	s a	2
	TOTAL WASTE CHARA	ACTERISTICS S	SCORE:			20
5.	TARGETS	987-1989 in artin (1980) and an engage (1980) and an engage (1980) and an engage (1980) and an engage (1980) a	*************************************		general de la companya de la la contacta de la cont	
	GROUND WATER USE				3	9
	DISTANCE TO NEARS AND TOTAL POPULATION NUMBER OF HOUS NUMBER OF PERS NUMBER OF CONN NUMBER OF IRE	SERVED SES SONS VECTIONS	9240 MATRIX VA 75 20 0 0		6 5	ద
***************************************	TOTAL TARGETS SCO		-			15

HRS SURFACE WATER ROUTE SCORE

	CATEGORY/FACTOR	RAW DAT		SN. YALUE	SCORE
1.	OBSERVED RELEASE	NO		í)	ť)
2.	ROUTE CHARACTERISTICS				**************************************
	SITE LOCATED IN SURFACE WATER SITE WITHIN CLOSED BASIN FACILITY SLOPE INTERVENING SLOPE	NO NO 2.5 2.5		0	Q
	24-HOUR RAINFALL	3.5	INCHES	3	(100) (100) (100)
	DISTANCE TO DOWN-SLOPE WATER	0	FEET	3	5
	PHYSICAL STATE		3		3
	TOTAL ROUTE CHARACTERISTICS SC	ORE:			12
3.	CONTAINMENT		3	- 4 M t - to	3
4.	WASTE CHARACTERISTICS				**************************************
	TOXICITY/PERSISTENCE:PENTACHLO	ROPHENOL			18
	WASTE QUANTITY CUBIC YDS DRUMS GALLONS TONS	0 200 0 0			
	TOTAL	50	CU. YDS	2	2
	TOTAL WASTE CHARACTERISTICS SC	ORE:			20
5.	TARGETS	the control of the co		a 18 mil 6 mg aga ng 18 8 64 ma mag at 18 mil 1	
	SURFACE WATER USE			1	3
	DISTANCE TO SENSITIVE ENVIRONM COASTAL WETLANDS FRESH WATER WETLANDS CRITICAL HABITAT		FEET	2	ć _†
	DISTANCE TO STATIC WATER DISTANCE TO WATER SUPPLY INTAK AND TOTAL POPULATION SERVED NUMBER OF HOUSES NUMBER OF PERSONS NUMBER OF CONNECTIONS NUMBER OF IRRIGATED ACRES		FEET	0	O
	TOTAL TARGETS SCORE:				7

HRS AIR ROUTE SCORE

	CATEGORY/FACTOR	RAW DATA	ASM. VALUE	SCORE
4	OBSERVED BELEASE	NO		
ii u	CDOCKACA LETTHOR	PALE	4.3	(,)

B. WASTE CHARACTERISTICS

REACTIVETY:

MATRIX VALLE

INCOMPATIBILITY

TOXICITY

WASTE GUANTITY CUBIC YARDS

DRUMS GALLONS TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE:

NZA

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS

- 0 to 0.25 mile
- 0 to 0.50 mile
- O to 1.0 mile
- O to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS COASTAL WETLANDS FRESH-WATER WETLANDS CRITICAL HABITAT

DISTANCE TO LAND USES
COMMERCIAL/INDUSTRIAL
PARK/FOREST/RESIDENTIAL
AGRICULTURAL LAND
PRIME FARMLAND
HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE:

N/A

AIR ROUTE SCORE (Sa) = 0.00

POOR LEGIBILITY

PORTIONS OF THIS DOCUMENT MAY BE UNREADABLE, DUE TO THE QUALITY OF THE ORIGINAL

HAZARD RANKING SYSTEM SCORING SUMMARY

4.

FOR

CHAMPION INTERNATIONAL CORPORATION
EPA SITE NUMBER SCD003342177
ORANGEBURG
ORANGEBURG COUNTY, SC
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY JERRI HIGGINS OF NUS CORPORATION ON 01/25/88

DATE OF THIS REPORT: 03/30/88
DATE OF LAST MODIFICATION: 03/30/88

GROUND WATER ROUTE SCORE: 34.29 SURFACE WATER ROUTE SCORE: 14.55 AIR ROUTE SCORE: 0.00

MIGRATION SCORE : 21.53

HRS GROUND WATER ROUTE SCORE

	CATEGORY/FACTOR	RAW DATA		ASN.	VALUE	SCORE
1.	OBSÉRVED RELEASE	NO	•••	*** \$10 16-24 \$-4 16554	0	O
2.	ROUTE CHARACTERISTICS					***************************************
	DEPTH TO WATER TABLE DEPTH TO BOTTOM OF WASTE		FEET FEET			
	DEPTH TO AQUIFER OF CONCERN	34	FEET		5	4
	PRECIPITATION EVAPORATION		INCHES			
	NET PRECIPITATION	5.0	INCHES	;	5	2
	PERMEABILITY	1.0X10-2	CM/SEC		3	3
	PHYSICAL STATE				3	3
	TOTAL ROUTE CHARACTERISTICS S	CORE:				12
з.	CONTAINMENT	e den eft te -100 te 100 te e e e t gif de entre met ett e e etterate en e en			3	3
4.	WASTE CHARACTERISTICS		ara 44 ara 9 sapag big daka dapa 1444 gada dah dari	-14 <u>0-15 in 442-16 in 1</u> 1 - 14 <u>00-454</u> in 111 - 14 an	9-4	
	TOXICITY/PERSISTENCE:CHROMIUM					18
	WASTE QUANTITY CUBIC YDS DRUMS GALLONS TONS	0 10001 0 0				
	TOTAL.	2500	CU. YD	S	8	8
	TOTAL WASTE CHARACTERISTICS SO	CORE:				26
5.	TARGETS			**************************************	- Prod th- Waldayan (from Att a life agen gloves one out	Aller greenere ver balletiett og bet sterme
	GROUND WATER USE				3	9
	DISTANCE TO NEAREST WELL AND TOTAL POPULATION SERVED NUMBER OF HOUSES NUMBER OF PERSONS NUMBER OF CONNECTIONS NUMBER OF IRRIGATED ACRES	7500 MATRIX VA 285 75 0 0	•	-	.2	12
	TOTAL TARGETS SCORE:					21
					_	

HRS SURFACE WATER ROUTE SCORE

	CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1.	OBSERVED RELEASE	NO	0	Q
2.	ROUTE CHARACTERISTICS		Herafter of Miles year for any facility of free communications and any any any and any facility for any free f	
	SITE LOCATED IN SURFACE WATER SITE WITHIN CLOSED BASIN FACILITY SLOPE INTERVENING SLOPE	NO NO 2.5 % 2.5 %	0	0
	24-HOUR RAINFALL	3.5 INCHES	3 3	3
	DISTANCE TO DOWN-SLOPE WATER	5 FEET	3	6
	PHYSICAL STATE	3		3
	TOTAL ROUTE CHARACTERISTICS SC	ORE:		12
З.	CONTAINMENT	3		3
4.	WASTE CHARACTERISTICS	in ett efter for helpe i mede et edler lennes men englede (jenne med fill stellet ett	adrondom valdet aggyvatda programa er vide en 1925 gapt av dige sagging af det er viden gag	
	TOXICITY/PERSISTENCE: CHROMIUM			18
	WASTE QUANTITY CUBIC YDS DRUMS GALLONS TONS	0 10001 0 0		
	TOTAL	2500 CU. YI	DS 8	8
all the series which	TOTAL WASTE CHARACTERISTICS SC	ORE:		26
5.	TARGETS			
	SURFACE WATER USE		2	6
	DISTANCE TO SENSITIVE ENVIRONM COASTAL WETLANDS FRESH-WATER WETLANDS CRITICAL HABITAT	ENTS NONE 2000 FEET 2000 FEET	2	4
	DISTANCE TO STATIC WATER DISTANCE TO WATER SUPPLY INTAKE AND TOTAL POPULATION SERVED NUMBER OF HOUSES NUMBER OF PERSONS NUMBER OF CONNECTIONS NUMBER OF IRRIGATED ACRES	> 3 MILES E > 3 MILES MATRIX VALUE O O O O O	O	0
· Salar	TOTAL TARGETS SCORE:			10

SITE: CHAMPION INTERNATIONAL CORPORATION

PAGE 4

HRS AIR ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	O	0

2. WASTE CHARACTERISTICS

REACTIVITY:

MATRIX VALUE

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY CUBIC YARDS

DRUMS GALLONS TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE:

N/A

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS

- 0 to 0.25 mile
- 0 to 0.50 mile
- 0 to 1.0 mile
- O to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS COASTAL WETLANDS FRESH-WATER WETLANDS

CRITICAL HABITAT

DISTANCE TO LAND USES
COMMERCIAL/INDUSTRIAL
PARK/FOREST/RESIDENTIAL
AGRICULTURAL LAND
PRIME FARMLAND
HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE:

N/A

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS FOR

SITE: CHAMPION INTERNATIONAL CORPORATION AS OF 03/30/88

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS 12
CONTAINMENT X 3
WASTE CHARACTERISTICS X 26
TARGETS X 21

= 19656 /57,330 \times 100 = 34.29 = S_{qw}

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS 12
CONTAINMENT X 3
WASTE CHARACTERISTICS X 26
TARGETS X 10

= 9360 /64,350 X 100 = 14.55 = S_{**}

AIR ROUTE SCORE

OBSERVED RELEASE

 $0/35,100 \times 100 = 0.00 = S_{air}$

SUMMARY OF MIGRATION SCORE CALCULATIONS

	S	5*
GROUND WATER ROUTE SCORE (Sow)	34.29	1175.80
SURFACE WATER ROUTE SCORE (S.W)	14.55	211.70
AIR ROUTE SCORE (Sair)	0.00	0.00
Segw + Segn + Segn		1387.50
√ (SPgw + SPgw + SPgwir)		37.25
$S_{m} = \sqrt{(S_{\omega}^{e} + S_{\omega}^{e} + S_{\omega}^{e})/1.73}$		21.53

RECONNAISSANCE CHECKLIST FOR HRS2 CONCERNS

Instructions: Obtain as much "up front" information as possible prior to conducting fieldwork. Complete the form in as much detail as you can, providing attachments as necessary. Cite the source for all information obtained.

Sitename: Champion International Corporation

City, County, State: Orangeburg, Orangeburg, South Carolina

EPAID No .: 5CD 003342177

Person responsible for form: Jerri Higgins

Date: 03/25/88

Air Pathway

Describe any potential air emission sources onsite: Glues & solvents used at plant.

Burning of glue sludge in fuel-fired boilers without district air personnel being aware.

Identify any sensitive environments within 4 miles: Carolina Bays, fresh water wetlands,

marshy areas surrounds the area (topo map, kef 11, 13)

Identify the maximally exposed individual (nearest residence or regularly occupied building workers do count): Workers at Decolam, Inc. (Ref. 1)

Groundwater Pathway

Identify any areas of karst terrain: - N/A

Identify additional population due to consideration of wells completed in overlying aquifers to the - N/A AOC:

Do significant targets exist between 3 and 4 miles from the site? no municipal supplies

Is the AOC a sole source aguifer according to Safe Drinking Water Act? (i.e. is the site located in Dade, Broward, Volusia, Putnam, or Flager County, Florida) no

Surface Water Pathway

Are there intakes located on the extended 15-mile migration pathway? r_{CC}

Are there recreational areas, sensitive environments, or human food chain targets (fisheries) along the extended pathway? yes, Middle Pen Creek, swamps, Carolina Bays

Onsite Exposure Pathway

Is there waste or contaminated soil onsite at 2 feet below land surface or higher? yes, drums at rear (Ref. 7,8)

Is the site accessible to non-employees (workers do not count)? not sure

area difficult to see back into property for a fence

Are there residences, schools, or daycare centers onsite or in close proximity?

yes, Whittaker School, directly behind facility, less than 500 feetauly (-topo map)

Are there barriers to travel (e.g., a river) within one mile? Mes, Middle Fen Creck

(topo map)

Appendix A

DUDGEARLE	E OBCANICE DATA DEPOSE	LJU,	, AMERS, CA.	07712700
PURGEABLE	E ORGANICS DATA REPORT			
** PRO.	JECT NO. 88-373 SAMPLE NO. 26416 SAMPLE TYPE: SEDIM		PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC	**
	RCE: CHAMPION INTERNATION		CITY: ORANGEBURG ST: SC	**
** STAT	TION ID: SD-03		COLLECTION START: 06/02/88 STOP:	00/00/00 **
11	104 ID. 3D-03		COLLECTION START. 00/02/00 STOP.	(1/1/00/00
	- 10			
** CASE	ENO.: 9702 SAS NO.:		D. NO,: J412	* *
*** * * 1				
UG/KI	G ANALYTICAL RESULTS	บ	UG/KG ANALYTICAL RESULTS	
,	The state of the s	•		
1201	CHLOROMETHANE		6UJ CIS-1.3-DICHLOROPROPENE	
130			6UJ TRICHLOROETHENE(TRICHLOROETHYLENE)	
130			6U DIBROMOCHLOROMETHANE_	
130	CHLOROETHANE		6U 1,1,2-TRICHLOROETHANE	
30UJ	METHYLENE CHLORIDE •		6U BÉNZENE	
20UJ			6UJ TRANS-1,3-DICHLOROPROPENE	
- 6Ŭ		NA	2-CHLOROETHYLVINYL ETHER	
		NM		
6 U			6UJ BROMOFORM	
6 U	1,1-DICHLOROETHANE		130 METHYL ISOBUTYL KETONE	
6 U	1.2-DICHLOROETHENE (TOTAL)		13UJ METHYL BUTYL KETONE	
6 U	CHLOROFORM		6UJ TETRACHLOROETHENE (TETRACHLOROETHYLE	NE)
6บั้ม			6U 1,1,2,2-TETRACHLOROETHANE	
13UR			6U TOLUENE	
6 U				
6 U			6U ETHYL BENZENE	
130			6U STYRENE	
6UJ	BROMOD I CHLOROMETHANE		6U TOTAL XYLENES	
-6Ŭ			22 PERCENT MOISTURE	
อบ	1,2-DICHLUROPROPANE		22 PERCENT MUISTURE	

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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PURGEABLE ORGANICS DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373
                       SAMPLE NO. 26418 SAMPLE TYPE: SOIL
                                                                                                                    . .
    SOURCE: CHAMPION INTERNATION
                                                               CITY ORANGEBURG
                                                                                       ST: SC
                                                                                                                    . .
. .
    STATION ID: SS-03
                                                               COLLECTION START: 06/02/88
                                                                                             STOP: 00/00/00
                                                                                                                    . .
                                                                                                                    * =
. .
    CASE NO.: 9702
                                          SAS NO .
                                                               D. NO.: J416
                                                                                                                    * *
   ...
                                                           UG/KG
                                                              UG/KG
                                                                                ANALYTICAL RESULTS
                     ANALYTICAL RESULTS
    10U CHLOROMETHANE
                                                                   CIS-1.3-DICHLOROPROPENE
                                                                    TRICHLOROETHENE (TRICHLOROETHYLENE)
    1011
        BROMOMETHANE
    100
        VINYL CHLORIDE
                                                                    DIBROMOCHLOROMETHANE
                                                                    1,1,2-TRICHLOROETHANE
BENZENE
    100
        CHLOROE THANE
                                                                 ŠÜ
    100
        METHYLENE CHLORIDE
                                                                 5Ŭ
                                                                    TRANS-1, 3-DICHLOROPROPENE
2-CHLOROETHYLVINYL ETHER
   20UJ
         ACETONE
                                                                 Si)
         CARBON DISULFIDE
                                                           NA
     5Ū
     ŠŬ.
         1.1-DICHLOROETHENE(1.1-DICHLOROETHYLENE)
                                                                    BROMOFORM
        1.1-DICHLOROETHANE
                                                                100
                                                                    METHYL ISOBUTYL KETONE
                                                                    METHYL BUTYL KETONE
        1.2-DICHLOROETHENE (TOTAL)
                                                                100
                                                                    TETRACHLOROETHENE (TETRACHLOROETHYLENE)
        CHLOROFORM
        1,2-DICHLOROETHANE
METHYL ETHYL KETONE
1,1,1-TRICHLOROETHANE
CARBON TETRACHLORIDE
                                                                 ŠŬ.
                                                                    1.1.2.2-TETRACHLOROETHANE
   10UR
                                                                300
                                                                    TOLUENE
                                                                    CHLOROBENZENE
                                                                 5Ú
                                                                 5Ŭ
                                                                    ETHYL BENZENE
    1 ŎŨ
         VINYL ACETATE
                                                                 5ŭ
                                                                    STYRENE
                                                                    TOTAL XYLENES
         BROMODICHLOROMETHANE
                                                                 5ù
                                                                    PERCENT MOISTURE
         1.2-DICHLOROPROPANE
```

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT, RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

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PURGEABLE ORGANICS DATA REPORT
   PROJECT NO. 88-373 SAMPLE NO. 26427 SAMPLE TYPE: SOIL
                                                           PROG ELEM: NSF COLLECTED BY: A SPAUGH
                                                                                                             . .
    SOURCE: CHAMPION INTERNATION
                                                           CITY: ORANGEBURG
* *
                                                                            ST: SC
                                                                                                             * *
                                                           COLLECTION START: 06/02/88
                                                                                         STOP: 00/00/00
* *
    STATION ID: SS-04
                                                                                                             . .
                                                                                                             * *
. .
                                        SAS NO.:
. .
    CASE NO.: 9702
                                                            D. NO.: J420
                                                                                                             . .
   UG/KG
                    ANALYTICAL RESULTS
                                                          UG/KG
                                                                           ANALYTICAL RESULTS
    10U CHLOROMETHANE
                                                             50 CIS-1.3-DICHLOROPROPENE
    10U BROMOMETHANE
                                                                TRICHLOROETHENE(TRICHLOROETHYLENE)
    100 VINYL CHLORIDE
                                                                DIBROMOCHLOROMETHANE
                                                                1,1,2-TRICHLOROETHANE
BENZENE
    10U CHLOROLTHANE
    20U METHYLENE CHLORIDE
                                                                TRANS-1, 3-DICHLOROPROPENE
2-CHLOROETHYLVINYL ETHER
   30UJ ACETONE
                                                             ŠÚ.
     5ŭ
        CARBON DISULFIDE
                                                        NA
        1.1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
                                                                BROMOFORM
        1,1-DICHLOROETHANE
                                                            10Ú
                                                                METHYL ISOBUTYL KETONE
     5U
        1.2-DICHLOROETHENE (TOTAL)
                                                                METHYL BUTYL KETONE
     5U
                                                            100
                                                                TETRACHLOROETHENE(TETRACHLOROETHYLENE)
     5U CHLOROFORM
                                                             50
     5U 1,2-DICHLOROETHANE
                                                                1.1.2.2-TETRACHLOROETHANE
   10UR METHYL ETHYL KETONE
                                                            20U
                                                                TOLUENE
        1,1,1-TRICHLOROETHANE
     5U
                                                             5U
                                                                CHLOROBENZENE
        CARBON TETRACHLORIDE
     5U
                                                             5u
                                                                ETHYL BENZENE
    100
        VINYL ACETATE
                                                                STYRENE
TOTAL XYLENES
     5U BROMODICHLOROMETHANE
                                                             ŠŬ.
        1,2-DICHLOROPROPANE
                                                                PERCENT MOISTURE
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REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

PURGEABLE ORGANICS DATA REPORT PROG ELEM: NSF COLLECTED BY: A SPAUGH SAMPLE NO. 26424 SAMPLE TYPE: SEDIM . . PROJECT NO 88-373 - -COLLECTION START: 06/02/88 SOURCE: CHAMPION INTERNATION STATION ID: SD-05 REGION IV QC BLANK . . * * STOP: 00/00/00 . . * * . . * * CASE NO - 9702 SAS NO . D. NO.: J426 * * . . UG/KG ANALYTICAL RESULTS UG/KG ANALYTICAL RESULTS 12U CHLOROMETHANE 60 CIS-1.3-DICHLOROPROPENE 12U BROMOMETHANE TRICHLOROFTHENE (TRICHLOROFTHYLENE) 12U VINYL CHLORIDE 6U DIBROMOCHLOROMETHANE 120 CHLORUE THANE 1.1.2-TRICHLOROETHANE 6U METHYLENE CHLORIDE BÉNZĒNĖ 13 БÜ TRANS-1, 3-DICHLOROPROPENE 2-CHLOROETHYLVINYL ETHER ACETONE CARBON DISULFIDE 41 60 NA 6U 1.1-DICHLOROETHENE(1.1-DICHLOROETHYLENE) BROMOFORM 6U 1.1-DICHLOROETHANE METHYL ISOBUTYL KETONE 60 120 1.2-DICHLOROETHENE (TOTAL) 12Ŭ METHYL BUTYL KETONE 611 TETRACHLOROETHENE (TETRACHLOROETHYLENE) 6U CHLOROFORM 6U 1.2-DICHLOROETHANE 1.1.2.2-TETRACHLOROFTHANE TÓLUENE 12Ū METHYL ETHYL KETONE 21 1,1,1-TRICHLOROETHANE CARBON TETRACHLORIDE 6Ü 6Ú CHLOROBENZENE 60 6Ü ETHYL BENZENE VINYL ACETATE 12U 6u STYRENE TOTAL XYLENES
PERCENT MOISTURE 6U BROMODICHLOROMETHANE 6Ü 1.2-DICHLOROPROPANE

REMARKS

REMARKS

FOOTNOTES *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT, RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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PUR	GEABLE	ORGANICS DATA	REPORT										
* * *	* * *	* * * * * * *	* * * * *						* * * * * *	* * * * *	* * * * * *	* * * * *	
**	PROJ	ECT NO. 88-373	SAMPLE	NO. 26412 SAI	PLE TYPE:	SOIL		PRUG	LLEM: NSF	COLLECTED I	BY: A SPAUGH	j	**
**	SOUR	CE: CHAMPION I	NIERNALION					CITY	ORANGEBURG	00/00/00	ST: SC		**
**	SIAI	ION ID: SB-01						COLLE	CTION START:	06/02/88	210	o: 00/00/00	**
**	CACE	NO.: 9702			AS NO .			D 14	0 . 1411				**
		* * * * * * *			M3 NU.:				0.; 0411				
	UG/KG		ANALYTICAL			• • • •		UG/KG	• • • • •		AL RESULTS		, , , ,
	- u,u		NITTE I I TONE	MEDULIO				00,110		A	- NESVETS		
	12UJ	CHLOROMETHANE						6UJ	CIS-1,3-DIG	CHLOROPROPE	NE		
	120	BROMOMETHANE						60ป			LOROETHYLENE	E)	
	120	VINYL CHLORID	Ε					6 U	DIBROMOCHLO				
	120	CHLOROETHANE						6บ	1,1,2-TRICH	HLOROETHANE			
	20UJ	METHYLENE CHL	ORIDE					, 6U	BENZENE				
	20UJ	ACETONE						6UJ		DICHLOROPRO			
	6U 6U	CARBON DISULF		TOUR OBSETUNCE	e)		NA	eu i		HYLVINYL ET	HEK		
	6U	1,1-DICHLOROE		ICHLOROETHYLE	IC <i>)</i>			60J 120	BROMOFORM METHYL ISO	BUTVI KETOM	E		
	6 Ŭ	1,2-DICHLOROE		1.3				1201	METHYL BUTY		-		
	6Ŭ	CHLOROFORM	INCHE (IOIA	L,				6UJ			RACHLOROETHY	(LENE)	
	6ŬĴ	1,2-DICHLOROE	THANF					6Ŭ		TRACHLOROET			
	12UR	METHYL ETHYL						7ŎŬ	TÓLÚĒNĒ				
	6U	1,1,1-TRICHLO						ĞŬ.	CHLOROBENZI	ENE			
	6 U	CARBON TETRAC	CHLORIDE					6Ū	ETHYL BENZI				
	120	VINYL ACETATE						60	STYRENE				
	6บูม	BROMODICHLORO						6U	TOTAL XYLE				
	6 U	1,2-DICHLOROP	PROPANE					15	PERCENT MO	ISTURE			

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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EYA-REGION 1	IV ESU, ATHENS, GA.	01/12/00
PURGEABLE ORGANICS DATA REPORT		
** PROJECT NO. 88-373 SAMPLE NO. 26414 SAMPLE TYPE: SEDIM	PROG ELEM: NSF COLLECTED BY: A SPAUGH	**
** SOURCE: CHAMPION INTERNATION	CITY: ORANGEBURG ST: SC	**
** STATION ID: SD-01	COLLECTION START: 06/02/88 STOP: 00/00/00	
**		**
** CASE NO.: 9702 SAS NO.:	D. NO.: J408	**
		* * * * ***
UG/KG ANALYTICAL RESULTS	UG/KG ANALYTICAL RESULTS	
12UJ CHLOROMETHANE	6UJ CIS-1, 3-DICHLOROPROPENE	
12U BROMOMETHANE	GUJ TRICHLOROETHENE(TRICHLOROETHYLENE)	
12U VINYL_CHLORIDE	6U DIBROMOCHLOROMETHANE	
120 CHLOROETHANE	6U 1,1,2-TRICHLOROETHANE	
20UJ METHYLENE CHLORIDE .	6U BÉNZENE	
30UJ ACETONE	6UJ TRANS-1,3-DICHLOROPROPENE	
6U CARBON DISULFIDE	NA 2-CHLOROETHYLVINYL ETHER	
6U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	6UJ BROMOFORM	
6U 1,1-DICHLOROETHANE	12U METHYL ISOBUTYL KETONE	
6U 1,2-DICHLOROETHENE (TOTAL)	12UJ METHYL BUTYL KETONE	
6U CHLOROFORM	6UJ TETRACHLOROETHENE (TETRACHLOROETHYLENE)	
6UJ 1,2-DICHLOROETHANE	6U 1,1,2,2-TETRACHLOROETHANE	
12UR METHYL ETHYL KETONE	6U TOLUENE	
6U 1,1,1-TRICHLOROETHANE	6U CHLOROBENZENE	
6U CARBON TETRACHLORIDE	6U ETHYL BENZENE	
12U VINYL ACETATE	6U STYRENE	
6UJ BROMODICHLOROMETHANE	6U TOTAL XYLENES	
6U 1,2-DICHLOROPROPANE	18 PERCENT MOISTURE	

REMARKS

FOOTNOTES *FOUTNUTES***
*A-ACTUAL VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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PURGEABLE ORGANICS DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP:
..
    PROJECT NO. 88-373 SAMPLE NO. 26411 SAMPLE TYPE: SOIL
                                                                                                                   . .
..
    SOURCE: CHAMPION INTERNATION
                                                                                                                   . .
* *
    STATION ID: SS-01
                                                                                       STOP: 00/00/00
                                                                                                                   * *
. .
                                                                                                                   . .
. .
    CASE NO.: 9702
                                         SAS NO.:
                                                               D. NO.: J409
                                                                                                                   **
   UG/KG
                                                             UG/KG
                     ANALYTICAL RESULTS
                                                                               ANALYTICAL RESULTS
                                                               5UJ CIS-1,3-DICHLOROPROPENE
5UJ TRICHLOROETHENE(TRICHLOROETHYLENE)
   10UJ CHLOROMETHANE
10U BROMOMETHANE
    100 VINYL CHLORIDE
                                                                   DIBROMOCHLOROMETHANE
                                                                    1.1.2-TRICHLOROETHANE
   10UJ CHLOROETHANE
                                                                5Ú
    7UJ METHYLENE CHLORIDE
                                                                   BÉNZENE
                                                                5U
   20UJ ACETONE
                                                                ŚÚ.
                                                                    TRANS-1, 3-DICHLOROPROPENE
     50
        CARBON DISULFIDE
                                                          NA
                                                                    2-CHLOROETHYLVINYL ETHER
        1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
                                                                5U
                                                                   BROMOFORM
    5UJ 1,1-DICHLOROETHANE
                                                               100
                                                                   METHYL ISOBUTYL KETONE
     5U 1,2-DICHLOROETHENE (TOTAL)
                                                              10UJ
                                                                   METHYL BUTYL KETONE
     5U
        CHLOROFORM
                                                               50J
                                                                    TETRACHLOROETHENE (TETRACHLOROETHYLENE)
                                                                   1,1,2,2-TETRACHLOROETHANE
TOLUENE
        1,2-DICHLOROETHANE
                                                                5Ú
     5U
   10UR METHYL ETHYL KETONE
                                                               40U
     5U 1,1,1-TRICHLOROETHANE
                                                                50
                                                                    CHLOROBENZENE
     5U CARBON TETRACHLORIDE
                                                                5υ
                                                                    ETHYL BENZENE
    100 VINYL ACETATE
                                                                    STYRENE
     5U BROMODICHLOROMETHANE
                                                                   TOTAL XYLENES
                                                                    PERCENT MOISTURE
        1.2-DICHLOROPROPANE
```

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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PURGEABLE ORGANICS DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373 SAMPLE NO. 26417 SAMPLE TYPE: SOIL
                                                             CITY: ORANGEBURG
..
    SOURCE: CHAMPION INTERNATION
                                                                                    ST: SC
                                                                                                                 * *
    STATION ID: CS-02
                                                             COLLECTION START: 06/02/88
                                                                                           STOP: 00/00/00
* *
                                                                                                                 **
..
                                                                                                                 * *
    CASE NO.: 9702
                                         SAS NO.:
                                                              D. NO.: J414
                                                                                                                 . .
. .
UG/KG
                                                                              ANALYTICAL RESULTS
   UG/KG
                     ANALYTICAL RESULTS
    22U
                                                              11U CIS-1.3-DICHLOROPROPENE
        CHLOROMETHANE
                                                              11U TRICHLOROETHENE (TRICHLOROETHYLENE)
    22U
        BROMOMETHANE
        VINYL CHLORIDE
    22U
                                                              11U DIBROMOCHLOROMETHANE
        CHLOROETHANE
METHYLENE CHLORIDE
                                                                  1,1,2-TRICHLOROETHANE
BENZENE
    22U
                                                              110
    5ÖÜ
                                                              110
                                                                  TRANS-1.3-DICHLOROPROPENE
2-CHLOROETHYLVINYL ETHER
        ACETONE
  200UJ
                                                              110
        CARBON DISULFIDE
    110
                                                          NA
        1.1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
                                                              110
                                                                   BROMOFORM
                                                                   METHYL ISOBUTYL KETONE
    11U 1.1-DICHLOROETHANE
                                                              220
    11U 1,2-DICHLOROETHENE (TOTAL)
                                                              22Ú
                                                                   METHYL BUTYL KETONE
                                                              110
    110
        CHL OROFORM
                                                                  TETRACHLOROETHENE (TETRACHLOROETHYLENE)
   11U 1,2-DICHLOROETHANE
22UR MÉTHYL ETHYL KETONE
11U 1,1,1-TRICHLOROETHANE
                                                             11U 1,1,2,2-TETRACHLOROETHANE
500U TOLUENE
                                                              11U CHLOROBENZENE
    11U CARBON TETRACHLORIDE
                                                              11U ETHYL BENZENE
    22U
        VINYL ACETATE
                                                              110
                                                                  STYRENE
    11U BROMODICHLOROMETHANE
                                                              11U TOTAL XYLENES
    11U 1,2-DICHLOROPROPANE
                                                                   PERCENT MOISTURE
```

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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Era-region iv	V ESD, ATTENS, GA.	07/12/00
PURGEABLE ORGANICS DATA REPORT		
** PROJECT NO. 88-373 SAMPLE NO. 26422 SAMPLE TYPE: SOIL	PROG ELEM: NSF COLLECTED BY: A SPAUGH	**
	CITY: ORANGEBURG ST: SC	**
DOGINGE, CHIPMIN TON THE ENGINEE TON	CITY: UKANGCHUNG 51. 3C	
** STATION ID: SB-02	COLLECTION START: 06/02/88 STOP: 00/00/00	**
**		**
** CASE NO.: 9702 SAS NO.:	D MG · J419	**
** CASE NO.: 9702 SAS NO.:		
		• • • • • • • • • • • • • • • • • • • •
UG/KG ANALYTICAL RESULTS	UG/KG ANALYTICAL RESULTS	
11U CHLOROMETHANE	5U CIS-1.3-DICHLOROPROPENE	
11U BROMOMETHANE	ŠÚ ŤŘÍCHĽŎROĒŤHĒŇĒ(ŤRÍCHĽŎROETHYLENE)	
11U VINYL CHLORIDE	5U DIBROMOCHLOROMETHANE	
11U CHLOROETHANE	5U 1,1,2-TRICHLOROETHANE	
20U METHYLENE CHLORIDE •	5U BÉNZENE	
30UJ ACETONE	50 TRANS-1.3-DICHLOROPROPENE	
50 CARBON DISULFIDE	NA 2-CHLORÓETHYLVINYL ETHER	
5U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	5U BROMOFORM	
	110 METHYL ISOBUTYL KETONE	
5U 1,1-DICHLOROETHANE	AN METHYL ISODOTYL RETONE	
5U 1,2-DICHLOROETHENE (TOTAL)	110 METHYL BUTYL KETONE	
5U CHLOROFORM	5U TETRACHLOROETHENE (TETRACHLOROETHYLENE)	
5U 1,2-DICHLOROETHANE	5U 1,1,2,2-TETRACHLOROETHANE	
11UR MÉTHYL ETHYL KETONE	5U TOLUENE	
5U 1.1.1-TRICHLOROETHANE	5Ŭ CHLOROBENZENE	
5U CARBON TETRACHLORIDE	5U ETHYL BENZENE	
11U VINYL ACETATE	5U STYRENE	
5U BROMODICHLOROMETHANE	5U TOTAL XYLENES	
5U 1,2-DICHLOROPROPANE	8 PERCENT MOISTURE	
ou i, a broiledior not hite	C I FIGERI MOTOLOGE	

REMARKS

FOOTNOTES "FOUNDITYS" AND THE SUMBLE AND AND TANDER AND THE STAND TO THE STANDARD OF THE STANDARD OF THE STANDARD OF MATERIAL

**A-AVERAGE VALUE **NA-NOT ANALYZED **NAI-INTERFERENCES **J-ESTIMATED VALUE **N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

**K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN **L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

**U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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**	KOEMDL	E OK	WANTC2	DAIA	REPORT													:				***
								21 SAME					PROG	EL EM	: NSF	COLLE						**
**	SOL	IRCE :	CHAMP 1	ION IN	TERNAT	ION						•	CITY	: ORAI	NGFBURG			ST: SC				* *
* *	STA	ATION	ID: SC	0-02									COLLE	ECTIO	N START:	: 06/0)2/88		STOP: C	00/00/00		* *
**		E NO	. 070	١.																		**
**	* # #	E NU.	970)2				S/	12 M). : 			υ. 1	.	J415			:				
	UG/K						RESUL 1				• • •	• •	UG/KG		• • •		ALYTICA			• • • •	• • • •	***
	120.		OROMET												-1,3-DIG							
	12L 12L		MOMETH												CHLOROE			OROE TH	YLENE)			
	121		IYL CHL .OROETH										60 6 0		ROMOCHLO ,2-trici							
	200,				RIDE								6Ŭ		ŹĔNE	HEONOL	- I I I MINE					
	40U.	J ACE	TONE			-							603	TRA	NS-1,3-(DICHLO	OROPROP	ENE				
	61		RBON DI									N			HLOROETI	HYLVIN	NYL ETH	ER				
	61		-DICH	LOROET	HENE(1	, 1-D	ICHLORO	DETHYLEN	:)				ย กา	BRO	MOFORM	A.17.4	FTANE					
	6t 6t	1 1 2	-DICH		HANE (TOTAL	1.)						12U 12UJ	MET	HYL ISON	DUITL Vi ket	KE I UNE					
	61	CHÍ	OROFOR		HENE (IUIA	L <i>)</i>						60J					ACHL OR	OETHYLE	NE)		
	6U.	1 1,2	DICHL		HANE								ĞŬ		.2.2-TE					· /		
	12UF		HYL ET			_							20 0		ÜENE							
	61				OE THAN								6 U		OROBENZ							
	6l 12l				LORIDE								6U 6U		YL BENZ	ENE						
	6Ü.		IYL ACE	HORON	IE THANE		•						60 60		RENE AL XYLE	NES						
	6		DICH										19		CENT MO		Ē					

REMARKS

FOOTNOTES *A-ACTUAL VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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	14 E30, ATTIENS, UA.
PURGEABLE ORGANICS DATA REPORT	
*** * * * * * * * * * * * * * * * * * *	
** PROJECT NO 88-373 SAMPLE NO 26419 SAMPLE TYPE SOTI	
THOUSEN NO. OF OIL SHAME EL NO. ECTIO SHAME EL TILE, DOZE	CITY OPANGERING ST SC
** SOURCE: CHAMPION INTERNATION	CITY: URANGPHURG 51: 5C
** STATION ID: SB-03	COLLECTION START: 06/02/88 STOP: 00/00/00 *1
**	**
** CASE NO.: 9702 SAS NO.:	D NO - 1417
** CASE NO.: 9702 SAS NO.:	D. NO 0417
UG/KG ANALYTICAL RESULTS	UG/KG ANALYTICAL RESULTS
11U CHLOROMETHANE	6U CIS-1,3-DICHLOROPROPENE
11U BROMOMETHANE	<u>GU TRICHLOROETHENE(TRICHLOROETHYLENE)</u>
11U VINYL CHLORIDE	6U DIBROMOCHLOROMETHANE
11U CHLOROETHANE	6Ú 1,1,2-TRICHLÓRÚETHANE
600 METHYLENE CHLORIDE .	60 BÉNZENE
20UJ ACETONE	
6U CARBON DISULFIDE	NA 2-CHLOROETHYLVINYL ETHER
6U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	6U BROMOFORM
	11U METHYL ISOBUTYL KETONE
	11U METHYL BUTYL KETONE
6U 1.2-DICHLOROETHENE (TOTAL)	
6U CHLOROFORM	6U TETRACHLOROETHENE(TETRACHLOROETHYLENE)
6U 1,2-DICHLOROETHANE	6U 1,1,2,2-TETRACHLOROETHANE
11UR MÉTHYL ETHYL KETÖNE	ĠU TÓLŬĒŇĒ
6U 1,1,1-TRICHLOROETHANE	6U CHLOROBENZENE
	OU CILLONOLIALINE
6U CÁRBON TÉTRACHLORIDE	<u>GU ETHYL B</u> ENZENE
11U VINYL ACETATE	6U STYRENE
6U BROMODICHLOROMETHANE 6U 1.2-DICHLOROPROPANE	6U TOTAL XYLENES
6U 1,2-DICHLOROPROPANE	11 PERCENT MOISTURE
OU 1, E DICHEONOF NOT ARE	II FENOLUI MOTOLONE

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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REMARKS

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FOOTNOTES

2.6-DINITROTOLUENE

*A-AVERAGE VALUE *NA-NOT ANALYZED *NA1-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESIDEE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

^{*}R-QC INDICATES THAT DATA UNUSABLE, COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

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EXTRACTABLE ORGANICS DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26414 SAMPLE TYPE: SEDIM
                                                                    PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP:
     SOURCE: CHAMPION INTERNATION
     STATION ID: SD-01
                                                                                                       STOP: 00/00/00
                                                                                                                               . .
                                                                                                                               * *
   CASE NO.: 9702
                                              SAS NO. :
                                                                     D. NO.: J408
                                                                                                                               * *
UG/KG
                       ANALYTICAL RESULTS
                                                                    UG/KG
                                                                                       ANALYTICAL RESULTS
    400U PHENOL
                                                                    2000U 3-NITROANILINE
    400U BIS(2-CHLOROETHYL) ETHER
                                                                     400U ACENAPHTHENE
    400U
         2-CHLOROPHENOL
                                                                   2000UJ
                                                                          2,4-DINITROPHENOL
    400u
         1,3-DICHLOROBENZENE
                                                                   2000UJ
                                                                           4-NITROPHENOL
    400U
        1.4-DICHLOROBENZĒNĒ .
                                                                     400U
                                                                          DIBENZOFURAN
         BENZYL ALCOHOL
    400U
                                                                           2.4-DINITROTOLUENE
                                                                     400U
    400u
         1,2-DICHLOROBENZENE
                                                                     400U
                                                                          DIETHYL PHTHALATE
         2-METHYLPHENOL
    400U
                                                                     400U
                                                                          4-CHLOROPHENYL PHENYL ETHER
         BIS(2-CHLOROISOPROPYL) ETHER
(3-AND/OR 4-)METHYLPHENOL
   400UJ
                                                                          FLUORENE
                                                                     400U
    400U
                                                                    2000U
                                                                           4-NITROANILINE
         N-NITROSODI-N-PROPYLAMINE
                                                                          2-METHYL-4,6-DINITROPHENOL
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
   400UJ
                                                                    2000u
    400U
         HEXACHLOROETHANE
                                                                     400U
   400UJ
         NITROBENZENE
                                                                     400U
                                                                          4-BROMOPHENYL PHENYL ETHER
         ISOPHORONE
    400U
                                                                     400U
                                                                          HEXACHLOROBENZENE (HCB)
    400U
         2-NITROPHENOL
                                                                          PENTACHLOROPHENOL
                                                                    2000U
    400u
         2,4-DIMETHYLPHENOL
                                                                          PHENANTHRENE
                                                                     400u
   2000U
         BÉNZOIC ACID
                                                                           ANTHRACENE
                                                                     400U
    400U
         BIS(2-CHLOROETHOXY) METHANE
                                                                     400U
                                                                          DI-N-BUTYLPHTHALATE
    400U
         2,4-DICHLOROPHENOL
                                                                      45J
                                                                           FLUORANTHENE
    400U
         1,2,4-TRICHLOROBENZENE
                                                                     400u
                                                                          PYRENE
    400U
         NAPHTHALENE
                                                                          BENZYL BUTYL PHTHALATE
                                                                     400U
                                                                          3.3'-DICHLOROBENZIDINE
BENZO(A)ANTHRACENE
    400U
         4-CHLOROANILINE
                                                                     810U
   400UJ
         HEXACHLOROBUTADIENE
                                                                     400U
         4-CHLORO-3-METHYLPHENOL
2-METHYLNAPHTHALENE
    400U
                                                                     400U
                                                                           CHRYSENE
    400U
                                                                     400U
                                                                          BIS(2-ETHYLHEXYL) PHTHALATE
    400U
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                     400U
                                                                          DI-N-OCTYLPHTHALATE
         2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
    400U
                                                                    400ÚJ
                                                                           BENZO(B AND/OR K) FLUORANTHENE
   2000U
                                                                           BENZO-A-PYRENE
                                                                     400U
                                                                          INDENO (1,2,3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
    400U
         2-CHLORONAPHTHALENE
                                                                     400u
  2000UJ
         2-NITROANILINE
                                                                     400U
   400U
         DIMETHYL PHTHALATE
                                                                     400U
                                                                          BENZO(GHI)PÉRYLENE
    400U
         ACENAPHTHYLENE
                                                                          PERCENT MOISTURE
   400U
         2.6-DINITROTOLUENE
```

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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07/12/88
EXTRACTABLE ORGANICS DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26411 SAMPLE TYPE: SOIL
                                                                    PROG ELEM: NSF COLLECTED BY: A SPAUGH
    SOURCE: CHAMPION INTERNATION
                                                                    CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88
    STATION ID: SS-01
                                                                                                    STOP: 00/00/00
                                                                                                                             * *
   CASE NO.: 9702
                                             SAS NO. :
                                                                     D. NO.: J409
UG/KG
                       ANALYTICAL RESULTS
                                                                   UG/KG
                                                                                      ANALYTICAL RESULTS
    340U PHENOL
                                                                   1600U 3-NITROANILINE
    3400 BIS(2-CHLOROETHYL) ETHER
                                                                          ACENAPHTHENE
                                                                    340U
    340U 2-CHLOROPHENOL
                                                                  1600UJ
                                                                          2.4-DINITROPHENOL
    340U
         1.3-DICHLOROBENZENE
                                                                          4-NITROPHENOL
                                                                  1600UJ
    340U
         1,4-DICHLOROBENZENE
                                                                    340U
                                                                         DIBENZOFURAN
    340U
         BÉNZYL ALCOHOL
                                                                    340U
                                                                         2,4-DINITROTOLUENE
    340U
         1.2-DICHLOROBENZENE
                                                                    3400 DIETHYL PHTHALATE
         2-METHYLPHENOL
    3400
                                                                          4-CHLOROPHENYL PHENYL ETHER
                                                                    340U
    340U
         BIS(2-CHLOROISOPROPYL) ETHER
                                                                          FLUORENE
                                                                    340u
    340U
         (3-AND/OR 4-)METHYLPHENOL
                                                                          4-NITROANILINE
                                                                   16000
   340U
         N-NITROSODI-N-PROPYLAMINE
                                                                    600U 2-METHYL-4,6-DINITROPHENOL
340U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
340U 4-BROMOPHENYL PHENYL ETHER
                                                                   16000
    340U
         HEXACHLOROETHANE
   340U
         NITROBENZENE
   340U
         ISOPHORONE
                                                                    340U
                                                                          HEXACHLOROBENZENE (HCB)
    340U
         2-NITROPHENOL
                                                                   1600U
                                                                          PENTACHLOROPHENOL
    340U
         2,4-DIMETHYLPHENOL
                                                                    340U
                                                                          PHENANTHRENE
  160001
         BENZOIC ACID
                                                                    340U
                                                                          ANTHRACENE
   340U
         BIS(2-CHLOROETHOXY) METHANE
                                                                    340U
                                                                          DI-N-BUTYLPHTHALATE
         2,4-DICHLOROPHENOL
1,2,4-TRICHLOROBENZENE
   3400
                                                                    340Ŭ
                                                                          FLUORANTHENE
   340U
                                                                    340U
                                                                          PYRENE
   340U
         NAPHTHALENE
                                                                    340U
                                                                          BENZYL BUTYL PHTHALATE
  340UJ
         4-CHLOROANILINE
                                                                    670U
                                                                          3.3'-DICHLOROBENZIDINE
  340UJ
         HEXACHLOROBUTADIENE
                                                                          BENZO(A)ANTHRACENE
                                                                    340U
   340U
         4-CHLORO-3-METHYLPHENOL
                                                                    340U
                                                                          CHRYSENE
   340U
         2-METHYLNAPHTHALENE
                                                                         BIS(2-ETHYLHEXYL) PHTHALATE
DI-N-OCTYLPHTHALATE
BENZO(B AND/OR K)FLUORANTHENE
                                                                    340U
  340UJ
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                    340U
   340U
         2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
                                                                    340Ŭ
   1600U
                                                                    340U
                                                                          BENZO-A-PYRENE
   340U
         2-CHLORONAPHTHALENE
                                                                    340U
                                                                          INDENO (1,2,3-CD) PYRENE
  16000
         2-NITROANILINE
                                                                    340U
                                                                         DIBENZO(A, H) ANTHRACENE
BENZO(GHI) PERYLENE
   340U
         DIMETHYL PHTHALATE
                                                                    340U
   340U
         ACENAPHTHYLENE
                                                                          PERCENT MOISTURE
   340U
         2.6-DINITROTOLUENE
```

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

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EXTRACTABLE ORGANICS DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC
    PROJECT NO. 88-373 SAMPLE NO. 26417 SAMPLE TYPE: SOIL
                                                                                                                               . .
     SOURCE: CHAMPION INTERNATION
                                                                                                                               * *
     STATION ID: CS-02
* *
                                                                    COLLECTION START: 06/02/88
                                                                                                    STOP: 00/00/00
                                                                                                                               * *
                                                                                                                               **
   CASE NO.: 9702
                                              SAS NO. :
                                                                     D. NO.: J414
. .
                                                                                                                               . .
   UG/KG
                                                                   UG/KG
                       ANALYTICAL RESULTS
                                                                                       ANALYTICAL RESULTS
   1800U PHENOL
                                                                    8900U 3-NITROANILINE
   1800U BIS(2-CHLOROETHYL) ETHER
                                                                          ACENAPHTHENE
                                                                    760J
   1800U 2-CHLOROPHENOL
                                                                   8900UJ
                                                                          2,4-DINITROPHENOL
         1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE
   18000
                                                                   890001
                                                                          4-NITROPHENOL
   18000
                                                                          DIBENZOFURAN
                                                                     460J
   18000
         BENZYL ALCOHOL
                                                                          2.4-DINITROTOLUENE
                                                                    18000
   18000
         1,2-DICHLOROBENZENE
                                                                          DIETHYL PHTHALATE
                                                                    18000
   18000
         2-METHYLPHENOL
                                                                    18000
                                                                           4-CHLOROPHENYL PHENYL ETHER
   1800U BIS(2-CHLOROISOPROPYL) ETHER
                                                                     760J
                                                                          FLUORENE
   1800U
         (3-AND/OR 4-)METHYLPHENOL
                                                                    8900U
                                                                           4-NITROANILINE
                                                                          2-METHYL-4,6-DINITROPHENOL
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
4-BROMOPHENYL PHENYL ETHER
   1800U N-NITROSODI-N-PROPYLAMINE
                                                                    8900U
   1800U HEXACHLOROETHANE
                                                                    18000
   1800U NITROBENZENE
                                                                    18000
   18000
                                                                    18000
         ISOPHORONE
                                                                           HEXACHLOROBENZENE (HCB)
  1800U
1800U
        2-NITROPHENOL
                                                                     9500
                                                                           PENTACHLOROPHENOL
        2.4-DIMETHYLPHENOL
                                                                     7000
                                                                           PHENANTHRENE
  8900UJ
         BÉNZOIC ACID
                                                                           ANTHRACENE
                                                                    1400J
                                                                           DI-N-BUTYLPHTHALATE
   1800Ü
         BIS(2-CHLOROETHOXY) METHANE
                                                                     460J
   1800U 2,4-DICHLOROPHENOL
1800U 1,2,4-TRICHLOROBENZENE
                                                                    10000
                                                                           FLUORANTHENE
                                                                          PYRENE
                                                                    6100
                                                                          BENZYL BUTYL PHTHALATE
3,3'-DICHLOROBENZIDINE
    830J
         NAPHTHALENE
                                                                    1800U
  1800ŬĴ
                                                                    3700Ŭ
         4-CHLOROANILINE
                                                                           BÉNZO(A)ANTHRACENE
  1800UJ HEXACHLOROBUTADIENE
                                                                     4100
   1800U 4-CHLORO-3-METHYLPHENOL
                                                                     4700
                                                                           CHRYSENE
    370J 2-METHYLNAPHTHALENE
                                                                          BIS(2-ETHYLHEXYL) PHTHALATE
                                                                    90000
   1800U HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                           DI-N-OCTYLPHTHALATE
                                                                     840J
         2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
   1800U
                                                                    8400J
                                                                           BENZO(B AND/OR K)FLUORANTHENE
   8900U
                                                                     3300
                                                                           BENZO-A-PYRENE
         2-CHLORONAPHTHALENE
                                                                           INDENO (1.2.3-CD) PYRENE
DIBENZO(A, H) ANTHRACENE
   18000
                                                                    1800J
   8900U
         2-NITROANILINE
                                                                     800J
   1800U DIMETHYL PHTHALATE
                                                                           BENZO(GHI)PERYLENE
                                                                    1800J
         ACENAPHTHYLENE
                                                                           PERCENT MOISTURE
   18000
  1800U 2,6-DINITROTOLUENE
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REMARKS

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FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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EPA-REGION IV ESD. ATHENS, GA.
                                                                                                                        07/12/88
EXTRACTABLE ORGANICS DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26422 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION
                                                                    PROG ELEM: NSF COLLECTED BY: A SPAUGH
                                                                    CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88
    STATION ID: SB-02
                                                                                                    STOP: 00/00/00
                                                                                                                               * *
   CASE NO.: 9702
                                              SAS NO. :
                                                                     D. NO.: J419
UG/KG
                       ANALYTICAL RESULTS
                                                                   UG/KG
                                                                                       ANALYTICAL RESULTS
   360U PHENOL
                                                                   1700U 3-NITROANILINE
   3600 BIS(2-CHLOROETHYL) ETHER
                                                                    360U
                                                                          ACENAPHTHENE
    360U 2-CHLOROPHENOL
                                                                   1700UJ
                                                                          2,4-DINITROPHENOL
   360U 1,3-DICHLOROBENZENE
                                                                   1700UJ
                                                                          4-NITROPHENOL
DIBENZOFURAN
    360U 1,4-DICHLOROBENZENE .
                                                                     360V
   360U BENZYL ALCOHOL
                                                                          2.4-DINITROTOLUENE
DIETHYL PHTHALATE
                                                                     360U
   360U
         1,2-DICHLOROBENZENE
                                                                     360U
   360U
         2-METHYLPHENOL
                                                                     360U
                                                                          4-CHLOROPHENYL PHENYL ETHER
         BIS(2-CHLOROISOPROPYL) ETHER
(3-AND/OR 4-)METHYLPHENOL
  360UJ
                                                                     360U
                                                                          FLUORENE
   360U
                                                                    1 700U
                                                                          4-NITROANILINE
  360UJ
         N-NITROSODI-N-PROPYLAMINE
                                                                          2-METHYL-4.6-DINITROPHENOL
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
4-BROMOPHENYL PHENYL ETHER
                                                                    1700U
   360Ŭ
         HEXACHLOROETHANE
                                                                     360U
  360UJ
         NITROBENZENE
                                                                     360U
   360Ŭ
         ISOPHORONE
                                                                    1 7000
                                                                          HEXACHLOROBENZENE (HCB)
   360U
         2-NITROPHENOL
                                                                    360U
360U
                                                                          PENTACHLOROPHENOL
   360U
         2,4-DIMETHYLPHENOL
                                                                          PHENANTHRENE
         BENZOIC ACID
  1700U
                                                                     360U
                                                                          ANTHRACENE
   360U
         BIS(2-CHLOROETHOXY) METHANE
                                                                     360U
                                                                          DI-N-BUTYLPHTHALATE
   360U
         2,4-DICHLOROPHENOL
                                                                          FLUORANTHENE
                                                                     360U
   360U
         1,2,4-TRICHLOROBENZENE
                                                                     360U
                                                                          PYRENE
   360U
         NAPHTHALENE
                                                                     3600
7200
                                                                          BENZYL BUTYL PHTHALATE
   360V
         4-CHLOROANILINE
                                                                          3,3'-DICHLOROBENZIDINE
  360UJ
         HEXACHLOROBUTADIENE
                                                                          BÉNZO(A)ANTHRACENE
                                                                     360U
   360U
         4-CHLORO-3-METHYLPHENOL
2-METHYLNAPHTHALENE
                                                                     360U
                                                                          CHRYSENE
   360U
                                                                     360U
                                                                          BIS(2-ETHYLHEXYL) PHTHALATE
   360u
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                     360U
                                                                          DI-N-OCTYLPHTHALATE
   360U
         2,4,6-TRICHLOROPHENOL
                                                                    360UJ
                                                                          BENZO(B AND/OR K)FLUORANTHENE
  1 700U
         2.4.5-TRICHLOROPHENOL
                                                                     360U
                                                                          BENZO-A-PYRENE
   360U
         2-CHLORONAPHTHALENE
                                                                     360U
                                                                          INDENO (1,2,3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
 1700UJ
         2-NITROANILINE
                                                                     360U
   360U
         DIMETHYL PHTHALATE
                                                                    360v
                                                                          BENZO(GHI)PERYLENE
   360U
         ACENAPHTHYLENE
                                                                          PERCENT MOISTURE
   360U 2,6-DINITROTOLUENE
```

REMARKS

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FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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EXTRACTABLE ORGANICS DATA REPORT
** PROJECT NO. 88-373 SAMPLE NO. 26421 SAMPLE TYPE: SEDIM PROG ELEM: NSF COLLECTED BY: A SPAUGH **
                                                                          CITY: ORANGEBURG ST: SC
     SOURCE: CHAMPION INTERNATION
                                                                                                                                         * *
     STATION ID: SD-02
                                                                          COLLECTION START: 06/02/88
                                                                                                              STOP: 00/00/00
                                                                                                                                        . .
* *
. .
                                                                                                                                        * *
** CASE NO.: 9702 SAS NO.: D. NO.: J415 ***
                      ANALYTICAL RESULTS
                                                                         UG/KG
    UG/KG
                                                                                              ANALYTICAL RESULTS
                                                                         2000U 3-NITROANILINE
    410U PHENOL
    410U BIS(2-CHLOROETHYL) ETHER
                                                                          410U ACENAPHTHENE
                                                                        2000UJ 2,4-DINITROPHENOL
2000U 4-NITROPHENOL
    410U 2-CHLOROPHENOL
          1,3-DICHLOROBENZENE
    4100
                                                                                DIBENZOFURAN
    410U
          1.4-DICHLOROBENZENE
                                                                          410U
                                                                          4100 2.4-DINITROTOLUENE
4100 DIETHYL PHTHALATE
          BENZYL ALCOHOL
    410U
          1,2-DICHLOROBENZENE
    410U
    410U
          2-METHYLPHENOL
                                                                          410U
                                                                               4-CHLOROPHENYL PHENYL ETHER
    410U BIS(2-CHLOROISOPROPYL) ETHER
                                                                          410U FLUORENE
          (3-AND/OR 4-)METHYLPHENOL
                                                                         20000
                                                                               4-NITROANILINE
     63J
                                                                         2000U 2-METHYL-4,6-DINITROPHENOL
410U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
    410Ŭ
          N-NITROSODI-N-PROPYLAMINE
    410U
          HEXACHLOROETHANE
                                                                                4-BROMOPHENYL PHENYL ETHER
    410U
          NITROBENZENE
                                                                          410U
          ISOPHORONE
                                                                          410Ú
                                                                                HEXACHLOROBENZENE (HCB)
    4100
    410Ú
          2-NITROPHENOL
                                                                                PENTACHLOROPHENOL
                                                                         2000U
    410U
          2,4-DIMETHYLPHENOL
                                                                          410U
                                                                                PHENANTHRENE
  2000UJ BÉNZOIC ACID
                                                                          410U
                                                                                ANTHRACENE
    410U
          BIS(2-CHLOROETHOXY) METHANE
                                                                                DI-N-BUTYLPHTHALATE
                                                                          410U
          2,4-DICHLOROPHENOL
1,2,4-TRICHLOROBENZENE
NAPHTHALENE
    410U
                                                                          410U
                                                                                FLUORANTHENE
                                                                                PYRENE
BENZYL BUTYL PHTHALATE
    410U
                                                                          410U
    410U
                                                                          410U
                                                                                3.3'-DICHLOROBENZIDINE
BENZO(A)ANTHRACENE
    410U
          4-CHLOROANILINE
                                                                         820UJ
   410UJ
          HEXACHLOROBUTADIENE
                                                                          410U
    410U
          4-CHLORO-3-METHYLPHENOL
                                                                                CHRYSENE
                                                                          410U
                                                                          410U BIS(2-ETHYLHEXYL) PHTHALATE
410U DI-N-OCTYLPHTHALATE
          2-METHYLNAPHTHALENE
    410U
          HEXACHLOROCYCLOPENTADIENE (HCCP)
   410UJ
          2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
                                                                                BENZO(B AND/OR K)FLUORANTHENE
BENZO-A-PYRENE
    410U
                                                                          410U
   2000U
                                                                          410U
                                                                                INDENO (1.2.3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
          2-CHLORONAPHTHALENE
    410U
                                                                          410U
          2-NITROANILINE
   2000U
                                                                         410UJ
    4100 DIMETHYL PHTHALATE
4100 ACENAPHTHYLENE
                                                                                BENZO(GHI)PERYLENE
                                                                          410U
                                                                            19
                                                                                PERCENT MOISTURE
    410U 2.6-DINITROTOLUENE
```

REMARKS

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FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAT-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRES NCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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EVIDACTABLE ODCANICS DATA DEDOOT	EPA-REGION IV ESD, ATHENS, GA. 07/	12/88
** PROJECT NO. 88-373 SAMPLE NO. 26419 SAMPLE SOURCE: CHAMPION INTERNATION STATION ID: SB-03	TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG COLLECTION START: OG/O2/88 STOP: OO/OO/OO D. NO.: J417 UG/KG ANALYTICAL RESULTS 1800U 3-NITROANILINE	* ***
** CASE NO.: 9702 SAS UG/KG ANALYTICAL RESULTS	NO.: D. NO.: J417 UG/KG ANALYTICAL RESULTS	* ***
370U PHENOL 370U BIS(2-CHLOROETHYL) ETHER 370U 2-CHLOROPHENOL 370U 1,3-DICHLOROBENZENE 370U 1,4-DICHLOROBENZENE 370U 1,2-DICHLOROBENZENE 370U 2-METHYLPHENOL 370U 8IS(2-CHLOROISOPROPYL) ETHER 370U (3-AND/OR 4-)METHYLPHENOL 370U N-NITROSODI-N-PROPYLAMINE 370U NITROBENZENE 370U ISOPHORONE 370U 2-NITROPHENOL 370U 2-NITROPHENOL 370U 2-ADIMETHYLPHENOL 370U 2,4-DIMETHYLPHENOL 1800UJ BÉNZOIC ACID 370U 2,4-DICHLOROETHOXY) METHANE 370U 1,2,4-DICHLOROBENZENE 370U 1,2,4-TRICHLOROBENZENE 370U 1,2,4-TRICHLOROBENZENE 370U 4-CHLOROANILINE 370U 4-CHLOROANILINE 370U 4-CHLOROANILINE 370U 4-CHLORO-3-METHYLPHENOL 370U 2,4,6-TRICHLOROPHENOL 370U 2,4,5-TRICHLOROPHENOL 370U 2,4,5-TRICHLOROPHENOL 370U 2-CHLORONAPHTHALENE 370U ACENAPHTHYLPHENOL 370U 2-NITROANILINE 370U DIMETHYL PHTHALATE 370U ACENAPHTHYLENE 370U ACENAPHTHYLENE	1800U 3-NITROANILINE 370U ACENAPHTHENE 1800UJ 2,4-DINITROPHENOL 370U DIBENZOFURAN 370U 2,4-DINITROTOLUENE 370U DIETHYL PHTHALATE 370U 4-CHLOROPHENYL PHENYL ETHER 1800U 2-METHYL-4,6-DINITROPHENOL 370U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE 370U ABROMOPHENYL PHENYL ETHER 370U ABROMOPHENYL PHENYL ETHER 370U HEXACHLOROBENZENE (HCB) 370U PENTACHLOROBENZENE (HCB) 370U PHENANTHRENE 370U PHENANTHRENE 370U DI-N-BUTYLPHTHALATE 370U PYENE 370U BENZYL BUTYL PHTHALATE 370U BENZYL BUTYL PHTHALATE 370U BENZYL BUTYL PHTHALATE 370U BENZYL BUTYL PHTHALATE 370U BENZOLA)ANTHRACENE	

REMARKS

FOOTNOTES

*A-ACTUAL VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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EVIDACTARIE OPCANICE DATA DE	EPA-REGIO	N IV ESU, ATHENS, GA.	07/12/00
** PROJECT NO. 88-373 S.	SAMPLE NO. 26416 SAMPLE TYPE: SED	IM PROG ELEM: NSF COLLECTED BY: A	SPAUGH **
** CASE NO.: 9702 *** UG/KG ANAL	SAS NO.: YTICAL RESULTS	D. NO.: J412 UG/KG ANALYTICAL RES	SULTS
420U PHENOL 420U BIS(2-CHLOROETHYL) 420U 1,3-DICHLOROBENZEN 420U 1,4-DICHLOROBENZEN 420U BÉNZYL ALCOHOL 420U 2-METHYLPHENOL 420U 2-METHYLPHENOL 420U (3-AND/OR 4-)METHY 420U N-NITROSODI-N-PROP 420U HEXACHLOROETHANE 420U 1SOPHORONE 420U 2-AITROPHENOL 420U 2,4-DIMETHYLPHENOL 2100UJ BÉNZOIC ACID 420U BIS(2-CHLOROETHOXY 420U 2,4-DIMETHYLPHENOL 420U 1,2,4-TRICHLOROBEN 420U 1,2,4-TRICHLOROBEN 420U 1,2,4-TRICHLOROBEN 420U 1,2,4-TRICHLOROBEN 420U 4-CHLORO-3-METHYLP 420U 4-CHLORO-3-METHYLP 420U 2-METHYLNAPHTHALEN 420U 2,4,5-TRICHLOROPHE 420U 2,4,5-TRICHLOROPHE 420U 2-CHLORONAPHTHALEN	DETHER NE NE OPYL) ETHER YLPHENOL Y) METHANE NZENE NE NE NTADIENE (HCCP) ENOL NE ENOL NE ENOL NE ENOL NE	CITY: ORANGEBURG COLLECTION START: O6/O2/88 D. NO.: J412 ***********************************	R HENYLAMINE E ENE

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
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EXTRACTABLE ORGANICS DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
CITY: ORANGEBURG ST: SC
COLLECTION START: 06/02/88 STOP: 00/00/00
    PROJECT NO. 88-373 SAMPLE NO. 26418 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: SS-03
                                                                                                                                . .
                                                                                                                                * *
                                                                                                                                * *
                                                                                                                                * *
   CASE NO.: 9702
                                              SAS NO.:
                                                                      D. NO.: J416
                                                                                                                                * *
UG/KG
                       ANALYTICAL RESULTS
                                                                    UG/KG
                                                                                        ANALYTICAL RESULTS
    680U PHENOL
                                                                    3300U 3-NITROANILINE
    680U BIS(2-CHLOROETHYL) ETHER
                                                                           ACENAPHTHENE
                                                                     680U
    680U 2-CHLOROPHENOL
                                                                           2,4-DINITROPHENOL
                                                                   3300VJ
                                                                    3300U
                                                                           4-NITROPHENOL
    680U 1,3-DICHLOROBENZENE
    680U 1.4-DICHLOROBENZENE .
                                                                     680U
                                                                           DIBENZOFURAN
    680U BENZYL ALCOHOL
                                                                     680U
                                                                           2.4-DINITROTOLUENE
    680U 1,2-DICHLOROBENZENE
                                                                     680U
                                                                           DIETHYL PHTHALATE
    680U 2-METHYLPHENOL
                                                                     680U
                                                                           4-CHLOROPHENYL PHENYL ETHER
                                                                           FLUORENE
    680U BIS(2-CHLOROISOPROPYL) ETHER
                                                                     680U
                                                                           4-NITROANILINE
2-METHYL-4,6-DINITROPHENOL
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
    680U (3-AND/OR 4-)METHYLPHENOL
                                                                    33000
    680U N-NITROSODI-N-PROPYLAMINE
                                                                    3300U
    680U HEXACHLOROETHANE
                                                                     680U
   680U NITROBENZENE
680U ISOPHORONE
                                                                     680U
                                                                           4-BROMOPHENYL PHENYL ETHER
                                                                     680U
                                                                           HEXACHLOROBENZENE (HCB)
   680U 2-NITROPHENOL
680U 2,4-DIMETHYLPHENOL
                                                                           PENTACHLOROPHENOL
                                                                     33000
                                                                     680V
                                                                           PHENANTHRENE
  3300UJ BÉNZOIC ACID
                                                                     680Ú
                                                                           ANTHRACENE
                                                                           DI-N-BUTYLPHTHALATE FLUORANTHENE
    680U BIS(2-CHLOROETHOXY) METHANE
                                                                     680U
    680U 2,4-DICHLOROPHENOL
680U 1,2,4-TRICHLOROBENZENE
                                                                      180J
                                                                      190J
                                                                           PYRENE
    680U NAPHTHALENE
                                                                     680U
                                                                           BENZYL BUTYL PHTHALATE
    680U 4-CHLOROANILINE
                                                                    1400UJ
                                                                           3.3'-DICHLOROBENZIDINE
   680UJ HEXACHLOROBUTADIENE
                                                                           BENZO(A)ANTHRACENE
                                                                     680U
    680U 4-CHLORO-3-METHYLPHENOL
                                                                     680U
                                                                           CHRYSENE
    680U 2-METHYLNAPHTHALENE
                                                                    6000U
                                                                           BIS(2-ETHYLHEXYL) PHTHALATE
   680UJ HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                           DI-N-OCTYLPHTHALATE
                                                                     680J
                                                                           BENZO(B AND/OR K)FLUORANTHENE
   680U 2,4,6-TRICHLOROPHENOL
3300U 2,4,5-TRICHLOROPHENOL
                                                                     680Ü
                                                                     680U
                                                                           BENZO-A-PYRENE
                                                                           INDENO (1,2,3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
    680U 2-CHLORONAPHTHALENE
                                                                     680V
   3300U 2-NITROANILINE
                                                                     680UJ
    680U DIMETHYL PHTHALATE
                                                                           BENZO(GHI)PERYLENE
                                                                     680U
    680U
         ACENAPHTHYLENE
                                                                           PERCENT MOISTURE
    680U 2.6-DINITROTOLUENE
```

REMARKS

FOOTNOTES *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

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EXTRACTABLE ORGANICS DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26427 SAMPLE TYPE: SOIL
                                                                    PROG ELEM: NSF COLLECTED BY: A SPAUGH
                                                                                                                              * *
    SOURCE: CHAMPION INTERNATION
                                                                    CITY: ORANGEBURG
COLLECTION START: 06/02/88
                                                                                             ŠŤ: SČ
    STATION ID SS-04
                                                                                                      STOP: 00/00/00
                                                                                                                              . .
. .
                                                                                                                              4 8
   CASE NO.: 9702
                                             SAS NO.:
                                                                     D. NO.: J420
                                                                                                                              . .
   *********
                                                                  ANALYTICAL RESULTS
                                                                   UG/KG
                                                                                      ANALYTICAL RESULTS
   340U PHENOL
                                                                   1700U 3-NITROANTI INF
   3400 BIS(2-CHLOROETHYL) ETHER
                                                                    340U
                                                                          ACENAPHTHENE
   340U
         2-CHLOROPHENOL
                                                                          2,4-DINITROPHENOL
                                                                  1.7000.3
   340U 1.3-DICHLOROBENZENE
                                                                  1700UJ
   34011
         1.4-DICHLOROBENZENE
                                                                    340U
                                                                          DIBENZOFURAN
   3400
         BENZYL ALCOHOL
                                                                         2.4-DINITROTOLUENE
                                                                    340U
   3400
         1,2-DICHLOROBENZENE
2-METHYLPHENOL
                                                                    3400 DIETHYL PHTHALATE
   340U
                                                                    340U
                                                                          4-CHLOROPHENYL PHENYL FTHER
  3400.1
         BIS(2-CHLOROISOPROPYL) ETHER
                                                                         FLUORENE
                                                                    340U
   3400
         (3-AND/OR 4-)METHYLPHENOL
                                                                   1 700U
                                                                          4-NITROANILINE
  34001
         N-NITROSODI-N-PROPYLAMINE
                                                                         2-METHYL-4,6-DINITROPHENOL
N-NITROSOQIPHENYLAMINE/DIPHENYLAMINE
                                                                   1 7000
   340U
         HEXACHLOROETHANE
                                                                    340Ŭ
  3400.0
         NITROBENZENE
                                                                    340U
                                                                          4-BROMOPHENYL PHENYL ETHER
   340U
         ISOPHORONE
                                                                    340U
                                                                          HEXACHLOROBENZENE (HCB)
   340U
         2-NITROPHENOL
                                                                   1 700U
                                                                          PENTACHLOROPHENOL
   3400
         2.4-DIMETHYLPHENOL
                                                                    340U
                                                                          PHENANTHRENE
   250J
         BENZOIC ACID
                                                                    340U
                                                                          ANTHRACENE
   340Ü
         BIS(2-CHLOROETHOXY) METHANE
                                                                          DI-N-BUTYLPHTHALATE
FLUORANTHENE
                                                                    3400
         2,4-DICHLOROPHENOL
1,2,4-TRICHLOROBENZENE
   3400
                                                                     67J
   3400
                                                                          PYRENE
                                                                     53J
   340U
         NAPHTHALENE
                                                                    340U
                                                                          BENZYL BUTYL PHTHALATE
   3400
         4-CHLOROANILINE
                                                                    690U
                                                                          3.3'-DICHLOROBENZIDINE
  340UJ
         HEXACHLOROBUTADIENE
                                                                          BENZO(A)ANTHRACENE
                                                                    340U
   340Û
         4-CHLORO-3-METHYLPHENOL
                                                                     56J
                                                                          CHRYSENE
         2-METHYLNAPHTHALENE
   340U
                                                                    5100
                                                                          BIS(2-ETHYLHEXYL) PHTHALATE
   340U
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                    340U
                                                                          DI-N-OCTYLPHTHALATE
         2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
2-CHLORONAPHTHALENE
   340U
                                                                   340UJ
                                                                          BENZO(B AND/OR K) FLUORANTHENE
  1700U
                                                                          BENZO-A-PYRENE
                                                                    340U
   340U
                                                                          INDENO (1,2,3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
                                                                    340U
 1.7000.1
         2-NITROANIL INF
                                                                    340U
         DIMETHYL PHTHALATE
   340U
                                                                    340U
                                                                          BENZO(GHI)PERYLENE
         ACENAPHTHYLENE
   340U
                                                                          PERCENT MOISTURE
         2.6-DINITROTOLUENE
```

REMARKS

FOOTNOTES

*NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

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FXTRACTABLE ORGANICS DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO 88-373
                          SAMPLE NO. 26424 SAMPLE TYPE: SEDIM
    SOURCE: CHAMPION INTERNATION
                                                                   CITY: ORANGEBURG
                                                                                             ST: SC
                                                                                                                            • •
. .
    STATION ID: SD-05 REGION IV OC BLANK
                                                                   COLLECTION START: 06/02/88
                                                                                                     STOP: 00/00/00
                                                                                                                            * *
                                                                                                                            **
   CASE NO.: 9702
                                             SAS NO.:
                                                                    D. NO.: J426
                                                                                                                            . .
   UG/KG
                       ANALYTICAL RESULTS
                                                                  UG/KG
                                                                                      ANALYTICAL RESULTS
   390U PHENOL
                                                                  1900U 3-NITROANILINE
   3900
         BIS(2-CHLOROFTHYL) ETHER
                                                                   3900
                                                                         ACENAPHTHENE
         2-CHLOROPHENOL
    39011
                                                                  19000
                                                                         2.4-DINITROPHENOL
    390U
         1.3-DICHLOROBENZENE
1.4-DICHLOROBENZENE
                                                                   19000
                                                                         4-NITROPHENOL
    390U
                                                                   390U
                                                                         DIBENZOFURAN
    390ŭ
         BÉNZYL ALCOHOL
                                                                    390Ŭ
                                                                         2.4-DINITROTOLUENE
    390ŭ
                                                                         DIETHYL PHTHALATE
         1 2-DICHLOROBENZENE
                                                                   3900
    390U
         2-METHYLPHENOL
                                                                   3900
                                                                         4-CHLOROPHENYL PHENYL ETHER
    3900
         BIS(2-CHLOROISOPROPYL) ETHER
                                                                   3900
                                                                         FI UORENE
    390U
         (3-AND/OR 4-)METHYLPHENOL
                                                                   19000
                                                                         4-NITROANIL INE
                                                                         2-METHYL-4,6-DINITROPHENOL
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
    390ŭ
         N-NITROSODI-N-PROPYLAMINE
                                                                   19000
   390U
         HEXACHLOROETHANE
                                                                   390U
   390U
         NITROBENZENE
                                                                         4-BROMOPHENYL PHENYL ETHER
                                                                    3900
   390U
390U
                                                                         HEXACHLOROBENZENE (HCB)
         ISOPHORONE
                                                                    390Ŭ
         2-NITROPHENOL
                                                                   19000
                                                                         PENTACHLOROPHENOL
   39011
         2.4-DIMETHYLPHENOL
                                                                    51.1
                                                                         PHENANTHRENE
   19000
         BENZOIC ACTO
                                                                   390Ŭ
                                                                         ANTHRACENE
                                                                         DI-N-BUTYLPHTHALATE
    390U
         BIS(2-CHLOROETHOXY) METHANE
                                                                    390U
         2.4-DICHLOROPHENOL
1,2,4-TRICHLOROBENZENE
    390U
                                                                    390Ú
                                                                         FLUORANTHENE
    3900
                                                                    390U
                                                                         PYRENE
   390U
390U
         NAPHTHALENE
                                                                    3900
                                                                         BENZYL BUTYL PHTHALATE
         4-CHLOROANIL INE
                                                                    780Ú
                                                                         3.3'-DICHLOROBENZIDINE
                                                                         BÉNZO(A)ANTHRACENE
    390U
         HEXACHLOROBUTADIENE
                                                                    390U
    390U
         4-CHLORO-3-METHYLPHENOL
                                                                    3900
                                                                         CHRYSENE
    390U
         2-METHYL NAPHTHAL ENE
                                                                    180.1
                                                                         BIS(2-ETHYLHEXYL) PHTHALATE
    390U
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                         DI-N-OCTYLPHTHALATE
                                                                    390u
    3900
         2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
                                                                    390Ú
                                                                         BENZO(B AND/OR K)FLUORANTHENE
   19000
                                                                    390U
                                                                         BENZO-A-PYRENE
   3900
19000
                                                                         INDENO (1,2,3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
         2-CHLORONAPHTHALENE
                                                                    390U
         2-NITROANILINE
                                                                    390U
   390U
         DIMETHYL PHTHALATE
                                                                    390U
                                                                         BENZO(GHI)PERYLENE
   390u
         ACENAPHTHYLENE
                                                                         PERCENT MOISTURE
   390U
         2.6-DINITROTOLUENE
```

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAT-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

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MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT ** PROJECT NO. 88-373 SAMPLE NO. 26417 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26417 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: CS-02 * * CITY: ORANGEBURG * * ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 . . * * CASE. NO.: 9702 . . D. NO.: J414 SAS NO.: * * * *

RESULTS UNITS COMPOUND 400JN UG/KG CARBAZOLE 40000J UG/KG 13 UNIDENTIFIED COMPOUNDS RESULTS UNITS COMPOUND 3000JN UG/KG BENZOFLUORANTHENE (NOT B OR K)

^{***}FOOTNOTES*** *A-AVERAGE VALUE *NA-NOI ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATFRIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

MISCELLANEOUS EXTRACTARIF COMPOUNDS - DATA REPORT PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26421 SAMPLE TYPE: SEDIM * * SOURCE: CHAMPION INTERNATION STATION ID: SD-02 CASE.NO.: 9702 SAS CITY: ORANGEBURG ST: SC ** COLLECTION START: 06/02/88 STOP: 00/00/00 * * * * SAS NO.: D. NO.: J415 . . * *

RESULTS UNITS COMPOUND 1000JN UG/KG BROMOHEXANE RESULTS UNITS COMPOUND 20000J UG/KG 11 UNIDENTIFIED COMPOUNDS

FOOTNOTES *A-AVERAGE VALUE *NA-NO! ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC PROJECT NO. 88-373 SAMPLE NO. 26416 SAMPLE TYPE: SEDIM * * SOURCE: CHAMPION INTERNATION STATION ID: SD-03 * * COLLECTION START: 06/02/88 D. NO.: J412 . . STOP: 00/00/00 * * CASE . NO .: 9702 MD NO: . . SAS NO.: * * . .

RESULTS UNITS COMPOUND 600JN UG/KG BROMOHEXANE

RESULTS UNITS COMPOUND 500J UG/KG 1 UNIDENTIFIED COMPOUND

FOOTNOTES

*A-AVERAGE VALUE *NA-NO! ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT PROJECT NO. 88-373 SAMPLE NO. 26418 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: SS-03 CASE.NO.: 9702 SAS NO.: PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC * * CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 D. NO.: J416 MD NO: * * * * ** STOP: 00/00/00 * * * * * * .. .

RESULTS UNITS COMPOUND N UG/KG PETROLEUM PRODUCT RESULTS UNITS COMPOUND 10000J UG/KG 8 UNIDENTIFIED COMPOUNDS

^{*}NA-NO! ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT * * * *

PROJECT NO. 88-373 SAMPLE NO. 26427 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: SS-04 CASE.NO.: 9702 SAS NO.: PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: STOP: 00/00/00

* * D. NO.: J420 * * * * . .

RESULTS UNITS COMPOUND 800JN UG/KG BROMOHEXANE 20000J UG/KG 17 UNIDENTIFIED COMPOUNDS

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RESULTS UNITS COMPOUND 10000JN UG/KG PENTACOSANE

FOOTNOTES *A-AVERAGE VALUE *NA-NO! ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT, RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC
    PROJECT NO. 88-373 SAMPLE NO. 26412 SAMPLE TYPE: SOIL
    SOURCE: CHAMPION INTERNATION
                                                                             ST: SC
                                                            COLLECTION START: 06/02/88
    STATION ID: SB-01
                                                                                         STOP: 00/00/00
                                                                                                                * *
                            SAS NUMBER:
                                                             D. NUMBER: J411
                                                                                                                . .
    CASE NUMBER: 9702
                                                                                                                * *
UG/KG
                    ANALYTICAL RESULTS
                                                            UG/KG
                                                                              ANALYTICAL RESULTS
   9.40 ALPHA-BHC
                                                             940 METHOXYCHLOR
   9.40 BETA-BHC
                                                             190
                                                                  ENDRIN KETONE
                                                                  CHLORDANE (TECH. MIXTURE) /1
   9.40 DELTA-BHC
  9.4UR GAMMA-BHC (LINDANE)
                                                             9411
                                                                  GAMMA-CHLORDANE
   9.4U HEPTACHLOR
                                                             94U
                                                                  ALPHA-CHLORDANE
                                                                  TOXAPHENE
   9.40
        AL DRIN
                                                             1900
                                                                 PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
PCB-1232 (AROCLOR 1232)
                                                             94U
   9.40
        HEPTACHLOR EPOXIDE
        ENDOSULFAN I (ALPHA)
   9.40
                                                             940
    190 DIELDRIN
                                                             94U
                                                             94U
                                                                  PCB-1242 (AROCLOR 1242)
    19U 4.4'-DDE (P.P'-DDE)
                                                                  PCB-1248 (AROCLOR 1248)
    19U ENDRIN
                                                             94U
                                                                 PCB-1254 (AROCLOR 1254)
PCB-1260 (AROCLOR 1260)
                                                             1900
    19U ENDOSULFAN II (BETA)
    19U 4.4'-DDD (P.P'-DDD)
19U ENDOSULFAN SULFATE
                                                             1900
                                                                  PERCENT MOISTURE
    190
        4,4'-DDT (P,P'-DDT)
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REMARKS

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***FOOTNOTES***
         *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

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PESTICIDES/PCB'S DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26414 SAMPLE TYPE: SEDIM
                                                           PROG ELEM: NSF COLLECTED BY: A SPAUGH
                                                                                                              . .
    SOURCE: CHAMPION INTERNATION STATION ID: SD-01
                                                           COLLECTION START: 06/02/88
* *
                                                                                                              . .
                                                                                         STOP: 00/00/00
::
                                                                                                              * *
    CASE NUMBER: 9702
..
                            SAS NUMBER:
                                                            D. NUMBER: J408
                                                                                                              * *
* *
                                                                                                              * *
UG/KG
                                                            UG/KG
                                                                             ANALYTICAL RESULTS
                    ANALYTICAL RESULTS
   9.80 ALPHA-BHC
                                                            98U METHOXYCHLOR
   9.8U BETA-BHC
                                                             20U
                                                                 ENDRIN KETONE
   9.8U DELTA-BHC
                                                                 CHLORDANE (TECH. MIXTURE) /1
  9.8UR GAMMA-BHC (LINDANE)
                                                                 GAMMA-CHLORDANE
                                                             98U
   9.8U HEPTACHLOR
                                                                 ALPHA-CHLORDANE
   9.80
        ALDRIN
                                                            200U
                                                                 TOXAPHENE
        HEPTACHLOR EPOXIDE
ENDOSULFAN I (ALPHA)
                                                                PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
   9.80
                                                             980
                                                             98U
   9.8U
                                                                PCB-1232 (AROCLOR 1232)
PCB-1242 (AROCLOR 1242)
    200 DIELDRIN
                                                             98U
    20U 4.4'-DDE (P.P'-DDE)
                                                             980
                                                                PCB-1248 (AROCLOR 1248)
PCB-1254 (AROCLOR 1254)
    200 ENDRIN
                                                             98u
    200 ENDOSULFAN II (BETA)
                                                            200U
    20U 4.4'-DDD (P.P'-DDD)
                                                            200U PCB-1260 (AROCLOR 1260)
    200 ENDOSULFAN SULFATE
                                                             18 PERCENT MOISTURE
    20U 4.4'-DDT (P.P'-DDT)
```

REMARKS

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD. ATHENS. GA.

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07/12/88 PESTICIDES/PCB'S DATA REPORT ** PROJECT NO. 88-373 SAMPLE NO. 26411 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH ** SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STATION ID: SS-01 STOP: 00/00/00 ** * * D. NUMBER: J409 . . CASE NUMBER: 9702 SAS NUMBER: ** UG/KG ANALYTICAL RESULTS UG/KG ANALYTICAL RESULTS 8.2U ALPHA-BHC 82U METHOXYCHLOR 8.20 BETA-BHC ENDRIN KETONE 16U 8.2U DELTA-BHC CHLORDANE (TECH. MIXTURE) /1 8.2UR GAMMA-BHC (LINDANE) 82U GAMMA-CHLORDANE 8.2U HEPTACHLOR ALPHA-CHLORDANE 82U 8.2U 8.2U 160U ALDRIN TOXAPHENE PCB-1016 (AROCLOR 1016) PCB-1221 (AROCLOR 1221) PCB-1232 (AROCLOR 1232) PCB-1242 (AROCLOR 1242) HEPTACHLOR EPOXIDE 82U 8.20 ENDOSULFAN I (ALPHA) 82U 16U DIELDRIN 82U 16U 4.4'-DDE (P.P'-DDE) 82V 16U ENDRIN 82U PCB-1248 (AROCLOR 1248) ENDOSULFAN II (BETA) 1600 PCB-1254 (AROCLOR 1254) 1600 PCB-1260 (AROCLOR 1260) 16U 4.4'-DDD (P.P'-DDD) 160 160 ENDOSULFAN SULFATE 2 PERCENT MOISTURE

REMARKS

16U 4,4'-DDT (P,P'-DDT)

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

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PESTICIDES/PCB'S DATA REPORT
** PROJECT NO. 88-373 SAMPLE NO. 26417 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH **
    SOURCE: CHAMPION INTERNATION
                                                                CITY: ORANGEBURG
                                                                                  ST: SC
                                                                COLLECTION START: 06/02/88
    STATION ID: CS-02
                                                                                               STOP: 00/00/00
    CASE NUMBER: 9702
                                                                 D. NUMBER: J414
                                                                                                                        . .
                                                                                                                        .
UG/KG
                     ANALYTICAL RESULTS
                                                                 UG/KG
                                                                                   ANALYTICAL RESULTS
                                                                 1800 METHOXYCHLOR
    18U ALPHA-BHC
    18U BETA-BHC
                                                                      ENDRIN KETONE
                                                                  36U
    18U DELTA-BHC
                                                                      CHLORDANE (TECH. MIXTURE) /1
    18UR GAMMA-BHC (LINDANE)
                                                                 180U
                                                                      GAMMA-CHLORDANE
    18U HEPTACHLOR
                                                                 180U
                                                                      ALPHA-CHLORDANE
                                                                 360U TOXAPHENE
    180
         ALDRIN
    18U HEPTACHLOR EPOXIDE
                                                                 180U PCB-1016 (AROCLOR 1016)
     18U ENDOSULFAN I (ALPHA)
                                                                 180U PCB-1221 (AROCLOR 1221)
                                                                1800 PCB-1232 (AROCLOR 1232)
1800 PCB-1242 (AROCLOR 1242)
1800 PCB-1248 (AROCLOR 1248)
3600 PCB-1254 (AROCLOR 1254)
3600 PCB-1260 (AROCLOR 1260)
     72
         DIELDRIN
     36Ü
         4.4'-DDE (P.P'-DDE)
     36U ENDRIN
     36U
         ENDOSULFAN II (BETA)
     36U 4,4'-DDD (P,P'-DDD)
     36U ENDOSULFAN SULFATE
                                                                      PERCENT MOISTURE
     36U 4,4'-DDT (P,P'-DDT)
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REMARKS

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

^{*}R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION *C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

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PERCENT MOISTURE

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EPA-REGION IV ESD, ATHENS, GA. 07/12/88 PESTICIDES/PCB'S DATA REPORT PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26422 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG * * .. ST: SC COLLECTION START: 06/02/88 D. NUMBER: J419 STATION ID: SB-02 STOP: 00/00/00 * * SAS NUMBER: CASE NUMBER: 9702 - -* * UG/KG ANALYTICAL RESULTS UG/KG ANALYTICAL RESULTS 8.70 ALPHA-BHC 870 METHOXYCHLOR 8.70 BETA-BHC 1 7U ENDRIN KETONE CHLORDANE (TECH. MIXTURE) /1 8. 7U DELTA-BHC 8. 7UR GAMMA-BHC (LINDANE) 87U GAMMA-CHLORDANE ALPHA-CHLORDANE TOXAPHENE 8.70 HEPTACHLOR 87U 8.7U ALDRIN 1700 8. 7U HEPTACHLOR EPOXIDE 87U PCB-1016 (AROCLOR 1016) PCB-1016 (AROCLOR 1016) PCB-1221 (AROCLOR 1221) PCB-1232 (AROCLOR 1232) PCB-1242 (AROCLOR 1242) PCB-1248 (AROCLOR 1248) PCB-1254 (AROCLOR 1254) PCB-1260 (AROCLOR 1260) 8.7U ENDOSULFAN I (ALPHA) 87U 17U DIELDRIN 87U 17U 4.4'-DDE (P.P'-DDE) 87U 17U ENDRIN 87U 1 7U ENDOSULFAN II (BETA) 1 70U 4,4'-DDD (P,P'-DDD)

REMARKS

1 7U

17U ENDOSULFAN SULFATE

17U 4.4'-DDT (P.P'-DDT)

REMARKS

FOOTNOTES *A-AVERAGE VALUE IS ANOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
**H-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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**C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

PESTICIDES/PCB'S DATA R		·	
PROJECT NO. 88-373 SOURCE: CHAMPION 1 STATION ID: SD-02	INTERNATION	: SEDIM PROG ELEM: NSF COLLECTED BY: CITY: ORANGEBURG ST COLLECTION START. 06/02/88	': SC
** CASE NUMBER: 9702	2 SAS NUMBER:	D. NUMBER: J415	**
UG/KG	ANALYTICAL RESULTS	* * * * * * * * * * * * * * * * * * *	RESULTS
9.9U ALPHA-BHC 9.9U BETA-BHC 9.9U DELTA-BHC 9.9UR GAMMA-BHC (L) 9.9U HEPTACHLOR 9.9U ALDRIN 9.9U HEPTACHLOR EF 9.9U ENDOSULFAN I 20U 4,4'-DDE (P,F 20U ENDOSULFAN I) 20U 4,4'-DDD (P,F 20U ENDOSULFAN I) 20U 4,4'-DDD (P,F 20U ENDOSULFAN SI 20U 4,4'-DDT (P,F	POXIDE (ALPHA) P'-DDE) I (BETA) P'-DDD) ULFATE	99U METHOXYCHLOR 20U ENDRIN KETONE CHLORDANE (TECH. MIXTURE 99U GAMMA-CHLORDANE /2 99U ALPHA-CHLORDANE /2 200U TOXAPHENE 99U PCB-1016 (AROCLOR 1016) 99U PCB-1221 (AROCLOR 1221) 99U PCB-1232 (AROCLOR 1232) 99U PCB-1242 (AROCLOR 1232) 99U PCB-1248 (AROCLOR 1248) 200U PCB-1254 (AROCLOR 1254) 200U PCB-1260 (AROCLOR 1260) 19 PERCENT MOISTURE	i) /1

REMARKS

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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*C-CONFIRMED BY GCMS
1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD. ATHENS. GA.

07/12/88

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PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
. .
    PROJECT NO. 88-373 SAMPLE NO. 26419 SAMPLE TYPE: SOIL
                                                                                                            . .
    SOURCE: CHAMPION INTERNATION
                                                          CITY: ORANGEBURG
                                                                             ST: SC
                                                                                                            **
                                                          COLLECTION START: 06/02/88
. .
    STATION ID: SB-03
                                                                                        STOP: 00/00/00
                                                                                                            **
    CASE NUMBER: 9702
                           SAS NUMBER:
                                                           D. NUMBER: J417
                                                                                                            = =
..
                                                                                                            * *
   UG/KG
                    ANALYTICAL RESULTS
                                                           UG/KG
                                                                           ANALYTICAL RESULTS
   9.00 ALPHA-BHC
                                                           900 METHOXYCHLOR
   9. OU BETA-BHC
                                                           180
                                                                ENDRIN KETONE
   9. OU DELTA-BHC
                                                                CHLORDANE (TECH. MIXTURE) /1
  9. OUR GAMMA-BHC (LINDANE)
                                                                GAMMA-CHLORDANE
   9. OU HEPTACHLOR
                                                           90U
                                                                ALPHA-CHLORDANE
   9.00
        ALDRIN
                                                           1800
                                                                TOXAPHENE
                                                               PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
PCB-1232 (AROCLOR 1232)
PCB-1242 (AROCLOR 1242)
   9.00
        HEPTACHLOR EPOXIDE
                                                           900
   9.00
        ENDOSULFAN I (ALPHA)
                                                           90U
    18U DIELDRIN
                                                           90U
    180
       4,4'-DDE (P.P'-DDE)
                                                           900
    18U ENDRIN
                                                           90U
                                                                PCB-1248 (AROCLOR 1248)
                                                               PCB-1254 (AROCLOR 1254)
    18U ENDOSULFAN II (BETA)
                                                           1800
                                                               PCB-1260 (AROCLOR 1260)
    18U 4.4'-DDD (P.P'-DDD)
                                                           180U
    18U ENDOSULFAN SULFATE
                                                               PERCENT MOISTURE
    18U 4,4'-DDT (P,P'-DDT)
```

REMARKS

REMARKS

FOOTNOTES

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*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD. ATHENS. GA.

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07/12/88

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PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373 SAMPLE NO. 26416 SAMPLE TYPE: SEDIM
..
    SOURCE: CHAMPION INTERNATION
                                                           CITY: ORANGEBURG
                                                                                   ST: SC
                                                                                                              * *
    STATION ID: SD-03
                                                            COLLECTION START: 06/02/88
                                                                                        STOP: 00/00/00
* *
                                                                                                              * *
..
    CASE NUMBER: 9702
                            SAS NUMBER:
                                                            D. NUMBER: J412
                                                                                                              * *
                                                                                                              . .
UG/KG
                    ANALYTICAL RESULTS
                                                            UG/KG
                                                                             ANALYTICAL RESULTS
    10U ALPHA-BHC
                                                            100U METHOXYCHLOR
    10U BETA-BHC
                                                            20U
                                                                 ENDRIN KETONE
    100
        DELTA-BHC
                                                                 CHLORDANE (TECH, MIXTURE) /1
   10UR
        GAMMA-BHC (LINDANE)
                                                                 GAMMA-CHLORDANE
                                                            1000
        HEPTACHLOR
    10U
                                                            100U
                                                                 ALPHA-CHLORDANE
                                                                 TOXAPHENE
        ALDRIN
    100
                                                            200V
                                                                PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
    100
        HEPTACHLOR EPOXIDE
                                                            1000
        ENDOSULFAN I (ALPHA)
    100
                                                            1000
                                                                PCB-1232 (AROCLOR 1232)
    20U
        DIELDRIN
                                                            1000
                                                                PCB-1242 (AROCLOR 1242)
    20U
        4.4'-DDE (P.P'-DDE)
                                                            1000
        ENDRIN
                                                                PCB-1248 (AROCLOR 1248)
    20U
                                                            1000
                                                            200U PCB-1254 (AROCLOR 1254)
200U PCB-1260 (AROCLOR 1260)
    20U
        ENDOSULFAN II (BETA)
        4.4'-DDD (P.P'-DDD)
ENDOSULFAN SULFATE
    20U
    20U
                                                             22 PERCENT MOISTURE
    200
        4.4'-DDT (P.P'-DDT)
```

REMARKS

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
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^{*}C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD. ATHENS. GA.

07/12/88

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PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373
                       SAMPLE NO. 26418 SAMPLE TYPE: SOIL
                                                                                                                  * *
                                                              CITY: ORANGEBURG
    SOURCE: CHAMPION INTERNATION
                                                                                   ST: SC
                                                                                                                  * *
    STATION ID: SS-03
                                                              COLLECTION START: 06/02/88
                                                                                            STOP: 00/00/00
                                                                                                                  . .
. .
    CASE NUMBER: 9702
                             SAS NUMBER:
                                                              D. NUMBER: J416
                                                                                                                  = =
                                                                                                                  * *
UG/KG
                                                              UG/KG
                     ANALYTICAL RESULTS
                                                                               ANALYTICAL RESULTS
   8.20 ALPHA-BHC
                                                               82U METHOXYCHLOR
                                                                   ENDRIN KETONE
   8.2U BETA-BHC
                                                               16U
   8. 2U
                                                                   CHLORDANE (TECH. MIXTURE) /1
        DELTA-BHC
   8. 2UR
        GAMMA-BHC (LINDANE)
                                                               82U
                                                                   GAMMA-CHLORDANE
   8.2U
        HEPTACHLOR
                                                               82U
                                                                   ALPHA-CHLORDANE
   8.20
8.20
        ALDRIN
                                                                   TOXAPHENE
                                                              160U
                                                                  PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
PCB-1232 (AROCLOR 1232)
PCB-1242 (AROCLOR 1242)
        HEPTACHLOR EPOXIDE
                                                               82U
   8.20
                                                               82Ú
        ENDOSULFAN I (ALPHA)
    160
        DIELDRIN
                                                               82U
    16U
        4,4'-DDE (P,P'-DDE)
                                                               82U
                                                              82U PCB-1248 (AROCLOR 1248)
160U PCB-1254 (AROCLOR 1254)
    160
        ENDRIN
        ENDOSULFAN II (BETA)
    160
    160
        4,4'-DDD (P,P'-DDD)
ENDOSULFAN SULFATE
                                                              160U PCB-1260 (AROCLOR 1260)
    160
                                                                3 PERCENT MOISTURE
    160
        4,4'-DDT (P,P'-DDT)
```

REMARKS

REMARKS

+FOOTNOTES*

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL

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*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

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PESTICIDES/PCB'S DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26427 SAMPLE TYPE: SOIL
                                                            PROG ELEM: NSF COLLECTED BY: A SPAUGH
                                                                                   ST: SC
    SOURCE: CHAMPION INTERNATION STATION ID: SS-04
                                                            CITY: ORANGEBURG
                                                                                                                * *
                                                            COLLECTION START: 06/02/88
                                                                                     STOP: 00/00/00
                                                                                                                * *
                                                             D. NUMBER: J420
    CASE NUMBER: 9702
                            SAS NUMBER:
                                                                                                                * *
* *
                                                                                                                * *
ANALYTICAL RESULTS
                                                            UG/KG
                                                                              ANALYTICAL RESULTS
   UG/KG
   8.3U ALPHA-BHC
                                                              830 METHOXYCHLOR
   8.30 BETA-BHC
                                                             170
                                                                  ENDRIN KETONE
   8.30 DELTA-BHC
                                                                  CHLORDANE (TECH. MIXTURE) /1
                                                                  GAMMA-CHLORDANE
  8 3UR GAMMA-BHC (LINDANE)
   8.30
        HEPTACHLOR
                                                             83U
                                                                  ALPHA-CHLORDANE
   8.30
        ALDRIN
                                                             1 7.0U
                                                                  TOXAPHENE
                                                                  PCB-1016 (AROCLOR 1016)
   8.30
        HEPTACHLOR EPOXIDE
                                                             83U
        ENDOSULFAN I (ALPHA)
   8.30
                                                             830
                                                                  PCB-1221 (AROCLOR 1221)
                                                                 PCB-1232 (AROCLOR 1232)
PCB-1242 (AROCLOR 1242)
    170
        DIELDRIN
                                                             83U
         4,4'-DDE (P,P'-DDE)
    1 7U
                                                             83U
                                                                 PCB-1248 (AROCLOR 1248)
PCB-1254 (AROCLOR 1254)
PCB-1260 (AROCLOR 1260)
    170
        ENDRIN
                                                             83U
        ENDOSULFAN II (BETA)
4,4'-DDD (P,P'-DDD)
ENDOSULFAN SULFATE
    170
                                                              640
    1 7U
                                                             1 70U
                                                                  PERCENT MOISTURE
    17U
        4.4'-DDT (P.P'-DDT)
```

REMARKS

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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*C-CONFIRMED BY GCMS
1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

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PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373 SAMPLE NO. 26424 SAMPLE TYPE: SEDIM
                                                                  CITY: ORANGEBURG ST: SC
COLLECTION START: 06/02/88
    SOURCE: CHAMPION INTERNATION
STATION ID: SD-05 REGION IV QC BLANK
. .
                                                                                                                          * *
                                                                                                   STOP: 00/00/00
* *
                                                                                                                          **
    CASE NUMBER: 9702
                               SAS NUMBER:
                                                                   D. NUMBER: J426
                                                                                                                          * *
                                                                                                                          * *
UG/KG
              ANALYTICAL RESULTS
                                                                  UG/KG
                                                                                     ANALYTICAL RESULTS
                                                                   940 METHOXYCHLOR
   9.40 ALPHA-BHC
    9.40 BETA-BHC
                                                                   190
                                                                       ENDRIN KETONE
    9.40 DELTA-BHC
                                                                        CHLORDANE (TECH. MIXTURE) /1
    9.40 GAMMA-BHC (LINDANE)
                                                                        GAMMA-CHLORDANE
                                                                   940
    9.40 HEPTACHLOR
                                                                   9411
                                                                        ALPHA-CHLORDANE
    9.4U ALDRIN
                                                                  1900
                                                                        TOXAPHENE
    9.40 HEPTACHLOR EPOXIDE
                                                                   94U
                                                                       PCB-1016 (AROCLOR 1016)
                                                                  940 PCB-1016 (AROCLOR 1016)

940 PCB-1221 (AROCLOR 1221)

940 PCB-1232 (AROCLOR 1232)

940 PCB-1242 (AROCLOR 1242)

940 PCB-1248 (AROCLOR 1248)

1900 PCB-1254 (AROCLOR 1254)

1900 PCB-1260 (AROCLOR 1260)
    9.40 ENDOSULFAN I (ALPHA)
    19U DIELDRIN
    19U 4,4'-DDE (P.P'-DDE)
19U ENDRIN
    19U ENDOSULFAN II (BETA)
    19U 4,4'-DDD (P,P'-DDD)
    190 ENDOSULFAN SULFATE
                                                                       PERCENT MOISTURE
    19U 4.4'-DDT (P.P'-DDT)
```

REMARKS

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

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PURGEABLE ORGANICS DATA REPORT ** PROJECT NO. 88-373 SAMPLE NO. 26413 SAMPLE TYPE: SURFACEWA SOURCE: CHAMPION INTERNATION

** STATION ID: SW-01

** COLLECTION START: 06/02/88

** STOP: 00/00/00

** . . * * CASE NO.: 9702 SAS NO.: D. NO.: J410 * * . . UG/L UG/I. ANALYTICAL RESULTS ANALYTICAL RESULTS 10U CHLOROMETHANE CIS-1.3-DICHLOROPROPENE 100 BROMOMETHANE 50 TRICHLOROETHENE (TRICHLOROETHYLENE) 100 VINYL CHLORIDE 5U DIBROMOCHLOROMETHANE 100 CHLOROETHANE 50 1,1,2-TRICHLOROETHANE BENZENE METHYLENE CHLORIDE 50J 5UJ 20UJ ACETONE 5µ TRANS-1, 3-DICHLOROPROPENE 2-CHLOROETHYLVINYL ETHER 5Ü CARBON DISULFIDE NΑ 5U 1.1-DICHLOROETHENE(1.1-DICHLOROETHYLENE) **BROMOFORM** 5UJ 1.1-DICHLOROETHANE 100 METHYL ISOBUTYL KETONE METHYL BUTYL KETONE 50 1,2-DICHLOROETHENE (TOTAL) 100 5Ú CHLOROFORM ŠÙ. TETRACHLOROETHENE(TETRACHLOROETHYLENE) 5U 1,2-DICHLOROETHANE 1OUR METHYL ETHYL KETONE 5U 1,1,1-TRICHLOROETHANE 1,1,2,2-TETRACHLOROETHANE TOLUENE 5U 80 CHLOROBENZENE 5Ū SU CARBON TETRACHLORIDE ŠŬ. ETHYL BENZENE 10U VINYL ACETATE STYRENE 50 BROMODICHLOROMETHANE TOTAL XYLENES

REMARKS

5U 1,2-DICHLOROPROPANE

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

PURGEABLE ORGANICS DATA REPORT	REGION IN ESU, AIMENS, GA.	07/12/88
*** * * * * * * * * * * * * * * * * *		
** PROJECT NO. 88-373 SAMPLE NO. 26420 SAMPLE TYPE		**
** SOURCE: CHAMPION INTERNATION	CITY: ORANGEBURG ST: SC	**
** STATION ID: SW-02	COLLECTION START: 06/02/88 STOP;	00/00/00
	D. NO.: J418	**
UG/L ANALYTICAL RESULTS	UG/L ANALYTICAL RESULTS	
10U CHLOROMETHANE	50 CIS-1.3-DICHLOROPROPENE	
10U BROMOMETHANE	SU TRICHLOROETHENE(TRICHLOROETHYLENE)	
100 VINYL CHLORIDE	5U DIBROMOCHLOROMETHANE	
10U CHLOROETHANE	5U 1,1,2-TRICHLOROETHANE	
5UJ METHYLENE CHLORIDE • 20UJ ACETONE	5UJ BÊNZENE 5U TRANS-1,3-DICHLOROPROPENE	
5U CARBON DISULFIDE	NA 2-CHLOROETHYLVINYL ETHER	
50 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	5U BROMOFORM	
5UJ 1,1-DICHLOROETHANE	100 METHYL ISOBUTYL KETONE	
5U 1,2-DICHLOROETHENE (TOTAL)	10U METHYL BUTYL KETONE	****
5U CHLOROFORM 5U 1.2-DICHLOROETHANE	5U TETRACHLOROETHENE(TETRACHLOROETHYLE 5U 1,1,2,2-TETRACHLOROETHANE	.NC)
10UR MÉTHYL ETHYL KETONE	20U TOLUENE	
5U 1.1.1-TRICHLOROETHANE	5U CHLOROBENZENE	
SU CARBON TETRACHLORIDE	5U ETHYL BENZENE	
10U VINYL ACETATE	50 STYRENE	
5U BROMODICHLOROMETHANE 5U 1 2-DICHLOROPROPANE	5U TOTAL XYLENES	
5U 1,2-DICHLOROPROPANE		

REMARKS

REMARKS

FOOTNOTFS *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

		IV ESD, ATHENS, GA.	0//12/66
PUR	GEABLE ORGANICS DATA REPORT		
**	PROJECT NO. 88-373 SAMPLE NO. 26415 SAMPLE TYPE: SURFACES SOURCE: CHAMPION INTERNATION STATION ID: SW-03	CEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC	* * * * * * * * * * * * * * * * * * *
			**
***	CASE NO.: 9702 SAS NO.: UG/L ANALYTICAL RESULTS	D. NO.: J413 UG/L ANALYTICAL RESULTS	* * * * * * * * * ***
	10U CHLOROMETHANE 10U BROMOMETHANE 10U VINYL CHLORIDE 10U CHLOROETHANE 5UJ METHYLENE CHLORIDE 5U CARBON DISULFIDE 5U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE) 5UJ 1,1-DICHLOROETHANE 5UJ 1,2-DICHLOROETHANE 5UJ 1,1-TRICHLOROETHANE 5UJ VINYL ACETATE 5UJ BROMODICHLOROMETHANE 5UJ 1,2-DICHLOROMETHANE 5UJ 1,2-DICHLOROMETHANE	5U CIS-1,3-DICHLOROPROPENE 5U TRICHLOROETHENE(TRICHLURGETHYLENE) 5U DIBROMOCHLOROMETHANE 5U 1,1,2-TRICHLUROETHANE 5U TRANS-1,3-DICHLOROPROPENE 2-CHLOROETHYLVINYL ETHER 5U BROMOFORM 10U METHYL ISOBUTYL KETONE 10U METHYL BUTYL KETONE 5U TETRACHLOROETHENE(TETRACHLOROETHYLE) 5U 1,1,2,2-TETRACHLOROETHANE 5U CHLOROBENZENE 5U CHLOROBENZENE 5U STYRENE 5U TOTAL XYLENES	NE)

REMARKS

REMARKS

^{*}FOUINDIES***
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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EXTRACTABLE ORGANICS DATA REPORT
*** PROJECT NO. 88-373 SAMPLE NO. 26413 SAMPLE TYPE: SURFACEWA SOURCE: CHAMPION INTERNATION STATION ID: SW-01

*** STATION ID: SW-01

*** STATION ID: SW-01
                                                                                                                                   * *
** CASE NO.: 9702
                                               SAS NO.:
                                                                        D. NO.: J410
                                                                                                                                   * *
UG/L
                        ANALYTICAL RESULTS
                                                                      UG/L
                                                                                          ANALYTICAL RESULTS
     20U PHENOL
                                                                       100U 3-NITROANILINE
     20U BIS(2-CHLOROETHYL) ETHER
                                                                        20U ACENAPHTHENE
     20U 2-CHLOROPHENOL
                                                                      100UJ 2,4-DINITROPHENOL
     20U 1,3-DICHLOROBENZENE
                                                                      100UJ 4-NITROPHENOL
     20U 1.4-DICHLOROBENZENE .
                                                                        200 DIBENZOFURAN
     200 BÉNZYL ALCOHOL
                                                                        200
                                                                             2.4-DINITROTOLUENE
     20U 1,2-DICHLOROBENZENE
                                                                        200 DIETHYL PHTHALATE
     20U 2-METHYLPHENOL
                                                                        20U
                                                                            4-CHLOROPHENYL PHENYL ETHER
         BIS(2-CHLOROISOPROPYL) ETHER
    20UJ
                                                                        200 FLUORENE
    20U (3-AND/OR 4-)METHYLPHENOL
20UJ N-NITROSODI-N-PROPYLAMINE
                                                                       100U 4-NITROANILINE
                                                                            2-METHYL-4,6-DINITROPHENOL
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
                                                                       1000
     20U HEXACHLOROETHANE
                                                                        20U
    20UJ NITROBENZENE
                                                                        200
                                                                            4-BROMOPHENYL PHENYL ETHER
    20UJ ISOPHORONE
                                                                       20UJ HEXACHLOROBENZENE (HCB)
     20U 2-NITROPHENOL
                                                                       1000 PENTACHLOROPHENOL
   20UJ 2,4-DIMETHYLPHENOL
100UJ BENZOIC ACID
                                                                        200 PHENANTHRENE
200 ANTHRACENE
    20UJ BIS(2-CHLOROETHOXY) METHANE
                                                                       20UJ DI-N-BUTYLPHTHALATE
     20U
          2,4-DICHLOROPHENOL
                                                                        200
                                                                            FLUORANTHENE
     20U
          1.2.4-TRICHLOROBENZENE
                                                                        200
200
                                                                             PYRENE
     20U NAPHTHALENE
                                                                            BENZYL BUTYL PHTHALATE
3,3'-DICHLOROBENZIDINE
BENZO(A)ANTHRACENE
    20UJ 4-CHLOROANILINE
                                                                        4ŎŬ
     20U HEXACHLOROBUTADIENE
                                                                        20U
     20U 4-CHLORO-3-METHYLPHENOL
                                                                        20U
                                                                             CHRYSENE
         2-METHYLNAPHTHALENE
     20U
                                                                       20UJ BIS(2-ETHYLHEXYL) PHTHALATE
     200
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                        20U DI-N-OCTYLPHTHALATE
     20U 2,4,6-TRICHLOROPHENOL
                                                                        20U BENZO(B AND/OR K)FLUORANTHENE
          2.4.5-TRICHLOROPHENOL
    1000
                                                                        20U
                                                                            BENZO-A-PYRENE
     20U 2-CHLORONAPHTHALENE
                                                                        20U
                                                                            INDENO (1,2,3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
   100UJ 2-NITROANILINE
                                                                       20UJ
     20U DIMETHYL PHTHALATE
                                                                        20U
                                                                             BENZO(GHI)PERYLENE
     20U ACENAPHTHYLENE
     20U 2.6-DINITROTOLUENE
```

REMARKS

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

PYTRACTARLE OWGANICS DATA DEDOOT	EPA-REGION IV ESD, ATHENS, GA.	07/12/88
*** * * * * * * * * * * * * * * * * *	TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUC CITY: ORANGEBURG COLLECTION START: 06/02/88 ST: SC	* * * * * * * * * * * * * * * * * * * *
** SOURCE: CHAMPION INTERNATION	CITY: ORANGEBURG ST: SC	GH ** **
** 21VITOM ID: 2M-05	COLLECTION START: 06/02/88 ST	OP: 00/00/00 **
** CASE NO.: 9702 SAS N	O.: D. NO.: J418	**
UG/L ANALYTICAL RESULTS	UG/L' ANALYTICAL RESULTS	* * * * * * * * * * * * * * * * * * * *
20U PHENOL 20U BIS(2-CHLOROETHYL) ETHER 20U 2-CHLOROPHENOL 20U 1,3-DICHLOROBENZENE 20U 1,4-DICHLOROBENZENE 20U 1,2-DICHLOROBENZENE 20U 2-METHYLPHENOL 20UJ BIS(2-CHLOROISOPROPYL) ETHER 20U (3-AND/OR 4-)METHYLPHENOL 20UJ N-NITROSODI-N-PROPYLAMINE 20UJ N-NITROSODI-N-PROPYLAMINE 20UJ NITROBENZENE 20UJ ISOPHORONE 20UJ ISOPHORONE 20UJ 2,4-DIMETHYLPHENOL 100UJ BÉNZOIC ACID 20UJ 2,4-DIMETHYLPHENOL 20UJ 2,4-DICHLOROETHOXY) METHANE 20U 2,4-DICHLOROPHENOL 20UJ 4-CHLOROBUTADIENE 20UJ 4-CHLOROBUTADIENE 20UJ 4-CHLOROBUTADIENE 20UJ 4-CHLOROBUTADIENE 20UJ 4-CHLOROBUTADIENE 20UJ 4-CHLOROPHENOL 20UJ 2,4-S-TRICHLOROPHENOL 20UJ 2,4,6-TRICHLOROPHENOL 20UJ 2,4,5-TRICHLOROPHENOL 20UJ 2-CHLORONAPHTHALENE 100UJ 2-NITROANILINE 20U DIMETHYL PHTHALATE 20U DIMETHYL PHTHALATE 20U ACENAPHTHYLENE	100U 3-NITROANILINE	
20U BIS(2-CHLOROETHYL) ETHER 20U 2-CHLOROPHENOL	20U ACENAPHTHENE 100UJ 2,4-DINITROPHENOL	
20U 1.3-DICHLOROBENZENE	10003 2,4-DINITROPHENOL	
20Ú 1 4-DÍCHLÖRÓBENZENE 20U BÉNZYL ALCOHOL	20U DIBENZOFURAN 20U 2.4-DINITROTOLUENE	
20U BÉNZYL ALCOHOL 20U 1,2-DICHLOROBENZENE	20U 2.4-DINITROTOLUENE 20U DIETHYL PHTHALATE	
20U 2-METHYLPHENOL 20UJ BIS(2-CHLOROISOPROPYL) ETHER	200 DIETHYL PHTHALATE 200 4-CHLOROPHENYL PHENYL ETHER 200 FLUORENE	
20UJ BIS(2-CHLOROISOPROPYL) ETHER 20U (3-AND/OR 4-)METHYLPHENOL	20U FLUORENE 100U 4-NITROANILINE	
20UJ N-NITROSODI-N-PROPYLAMINE 20U HEXACHLOROETHANE	100U 2-METHYL-4,6-DINITROPHENOL	AA87A15
20UJ NITROBENZENE	3J N-NÎTROSODÎPHÊNYLÂMÎNÊ/DÎPHENYL 20U 4-BROMOPHENYL PHENYL ETHER	AMINE
20UJ ISOPHORONE 20U 2-NITROPHENOL	20UJ HEXACHLOROBENZENE (HCB)	
20UJ 2,4-DIMETHYLPHENOL	100U PENTACHLOROPHENOL 20U PHENANTHRENE	
100UJ BÉNZOIC ACID 20UJ BIS(2-CHLOROETHOXY) METHANE	20U ANTHRACENE	
200 2,4-DICHLOROPHENOL	3J DI-N-BUTYLPHTHALATE 20u fluoranthene	
20U 1,2,4-TRICHLOROBENZENE 20U NAPHTHALENE	20U PYRENE	
20UJ 4-CHLOROANILINE	200 BEŇŽÝĽ BUTYL PHTHALATE 400 3,3'-DICHLOROBENZIDINE	
20U HEXACHLOROBUTADIENE 20U 4-CHLORO-3-METHYLPHENOL	200 BÉNZO(A)ANTHRACENE 200 CHRYSENE	
20U 4-CHLORO-3-METHYLPHENOL 20U 2-METHYLNAPHTHALENE	20U CHRYSËNË 20UJ BIS(2-ETHYLHEXYL) PHTHALATE	
20U HEXACHLOROCYCLOPENTADIENE (HCCP)	20U DI-N-OCTYLPHTHALATE	
20U 2,4,6-TRICHLOROPHENOL 10OU 2,4,5-TRICHLOROPHENOL	20U BÊNZO(B AND/OR K)FLUORANTHENE 20U BENZO-A-PYRENE	
20U 2-CHLORONAPHTHALENE 100UJ 2-NITROANILINE 20U DIMETHYL PHTHALATE	200 INDENO (1,2,3-CD) PYRENE	
100UJ 2-NITROANILINE 20U DIMETHYL PHTHALATE	20UJ DIBENZO(A,H)ANTHRACENE 20U BENZO(GHI)PERYLENE	
200 ACENAPHTHYLENE	ZOV DENZOLUNI / PERTLENE	
20U 2,6-DINITROTOLUENE		

REMARKS

REMARKS

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EXTRACTABLE ORGANICS DATA REPORT ** PROJECT NO. 88-373 SAMPLE NO. 26415 SAMPLE TYPE: SURFACEWA SOURCE: CHAMPION INTERNATION STATION ID: SW-03

** STATION ID: SW-03

** STATION STATE 06/02/88

** STOP: 00/00/00

** CASE NO.: 9702 SAS NO.: D. NO.; J413 . . * * UG/L ANALYTICAL RESULTS UG/L ANALYTICAL RESULTS 100U 3-NITROANILINE 200 PHENOL 200 BIS(2-CHLOROETHYL) ETHER 200 ACENAPHTHENE 100UJ 2,4-DINITROPHENOL 200 2-CHLOROPHENOL 20U 1.3-DICHLOROBENZENE 100UJ 4-NITROPHENOL 20U 1.4-DICHLOROBENZENE • 20U DIBENZOFURAN 200 2.4-DINITROTOLUENE 200 BÉNZYL ALCOHOL ZOU DIETHYL PHTHALATE 200 1,2-DICHLOROBENZENE 200 2-METHYLPHENOL 20U 4-CHLOROPHENYL PHENYL ETHER 20UJ BIS(2-CHLOROISOPROPYL) ETHER 200 FLUORENE 20U (3-AND/OR 4-)METHYLPHENOL 20UJ N-NITROSODI-N-PROPYLAMINE 4-NITROANILINE 100U 2-METHYL-4,6-DINITROPHENOL N-NITROSODIPHENYLAMINE/DIPHENYLAMINE 1000 200 HEXACHLOROETHANE 20U 4-BROMOPHENYL PHENYL ETHER 20UJ NITROBENZENE 20U 20UJ ISOPHORONE 20UJ HEXACHLOROBENZENE (HCB) 20U 2-NITROPHENOL 100U PENTACHLOROPHENOL 20Ŭ 20UJ 2,4-DIMETHYLPHENOL PHENANTHRENE 100UJ BENZOIC ACID 20V ANTHRACENE 2ŌUJ 20UJ BIS(2-CHLOROETHOXY) METHANE DI-N-BUTYLPHTHALATE 2.4-DICHLOROPHENOL 1,2,4-TRICHLOROBENZENE FLUORANTHENE **20**0 20U 20U **200** PYRENE NAPHTHALENE 20U BENZYL BUTYL PHTHALATE 20U 3.3'-DICHLOROBENZIDINE BENZO(A)ANTHRACENE 20UJ 4-CHLOROANILINE 40U 20U HEXACHLOROBUTADIENE 20U **20**0 4-CHLORO-3-METHYLPHENOL **200** CHRYSENE 20U 2-METHYLNAPHTHALENE 20UJ BIS(2-ETHYLHEXYL) PHTHALATE 20U HEXACHLOROCYCLOPENTADIENE (HCCP) DI-N-OCTYLPHTHALATE 20U 20U 2,4,6-TRICHLOROPHENOL 100U 2,4,5-TRICHLOROPHENOL 20U 2-CHLORONAPHTHALENE **200** BENZO(B AND/OR K)FLUORANTHENE BENZO-A-PYRENE 1000 20U INDENO (1,2,3-CD) PYRENE DIBENZO(A,H)ANTHRACENE 20U 2-NITROANILINE 100VJ 20UJ 20U DIMETHYL PHTHALATE BENZO(GHI)PERYLENE 20U 20U ACENAPHTHYLENE 20U 2.6-DINITROTOLUENE

REMARKS

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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PESTICIDES/PCB'S DATA REPORT
SAMPLE NO. 26413 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373
..
                                                                                                               **
    SOURCE: CHAMPION INTERNATION
                                                           CITY: ORANGEBURG
                                                                             ST: SC
                                                                                                               * *
    STATION ID: SW-01
                                                            COLLECTION START: 06/02/88
                                                                                         STOP: 00/00/00
                                                                                                              * *
* *
    CASE NUMBER: 9702
                            SAS NUMBER:
                                                            D. NUMBER: J410
                                                                                                               * *
..
                                                                                                               * *
   UG/L
                    ANALYTICAL RESULTS
                                                            UG/L
                                                                             ANALYTICAL RESULTS
 0.050U ALPHA-BHC
                                                           0.500
                                                                 METHOXYCHLOR
 0.0500
        BETA-BHC
                                                           0.100
                                                                 ENDRIN KETONE
 0.0500
                                                                 CHLORDANE (TECH. MIXTURE) /1
        DELTA-BHC
0.050UR
        GAMMA-BHC (LINDANE)
                                                           0.500
                                                                 GAMMA-CHLORDANE
 0.0500
        HEPTACHLOR
                                                           0.50U
                                                                 ALPHA-CHLORDANE
 0 0500
        ALDRIN
                                                                 TOXAPHENE
                                                           1.00
                                                                 PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
 0.0500
        HEPTACHLOR EPOXIDE
                                                           0.500
 0.0500
        ENDOSULFAN I (ALPHA)
                                                           0.500
                                                                 PCB-1232 (AROCLOR 1232)
  O. 10U DIELDRIN
                                                           0.500
  0.100
                                                           0.500
                                                                 PCB-1242 (AROCLOR 1242)
        4,4'-DDE (P,P'-DDE)
                                                                PCB-1248 (AROCLOR 1248)
PCB-1254 (AROCLOR 1254)
PCB-1260 (AROCLOR 1260)
        ENDRIN
  0.100
                                                           0.500
        ENDOSULFAN II (BETA)
  0.100
                                                            1.00
  0.10U 4,4'-DDD (P,P'-DDD)
0.10U ENDOSULFAN SULFATE
                                                            1.00
  0.10U 4.4'-DDT (P.P'-DDT)
```

REMARKS

FOOTNOTES

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*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE, COMPOUND MAY OR MAY NOT BE PRESENT, RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

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EPA-REGION IV ESD. ATHENS. GA. 07/12/88 PESTICIDES/PCB'S DATA REPORT PROJECT NO. 88-373 SAMPLE NO. 26420 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 D. NUMBER: J418 SOURCE: CHAMPION INTERNATION * * STATION ID: SW-02 CASE NUMBER: 9702 * * ** SAS NUMBER: . . * * * * UG/L ANALYTICAL RESULTS UG/L ANALYTICAL RESULTS U. 050U ALPHA-BHC 0.500 METHOXYCHLOR 0.050U BETA-BHC 0.100 ENDRIN KETONE 0.050U DELTA-BHC 0.050UR GAMMA-BHC (LINDANE) CHLORDANE (TECH. MIXTURE) /1
GAMMA-CHLORDANE /2 0.500 0.050U HEPTACHLOR 0.50V ALPHA-CHLORDANE 0.050U ALDRIN TOXAPHENE 1,00 0.500 0.050U HEPTACHLOR EPOXIDE PCB-1016 (AROCLOR 1016) 0.0500 ENDOSULFAN I (ALPHA) 0.500 PCB-1221 (AROCLOR 1221) O. 10U DIELDRIN 0.500 PCB-1232 (AROCLOR 1232) 0.10U 4,4'-DDE (P,P'-DDE) 0.50V PCB-1242 (AROCLOR 1242) 5.500 PCB-1248 (AROCLOR 1248) 1.00 PCB-1254 (AROCLOR 1254) 1.00 PCB-1260 (AROCLOR 1260) 0.100 ENDRIN 0.500

REMARKS

0.100 ENDOSULFAN II (BETA)
0.100 4.4'-DDD (P.P'-DDD)
0.100 ENDOSULFAN SULFATE 0.10U 4.4'-DDT (P.P'-DDT)

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED. SEE CHLORDANE CONSTITUENTS. SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD. ATHENS, GA.

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07/12/88

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PESTICIDES/PCB'S DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26415 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH
* *
                                                                                                                   . .
                                                              CITY: ORANGEBURG ST: SC
COLLECTION START: 06/02/88
    SOURCE: CHAMPION INTERNATION
. .
                                                                                                                   . .
    STATION ID: SW-03
                                                                                           STOP: 00/00/00
. .
                                                                                                                   **
. .
    CASE NUMBER: 9702
                             SAS NUMBER:
                                                               D. NUMBER: J413
                                                                                                                   **
* *
                                                                                                                   * *
UG/L
                     ANALYTICAL RESULTS
                                                              UG/L
                                                                                ANALYTICAL RESULTS
 0.0500 ALPHA-BHC
                                                             O 500
                                                                   METHOXYCHLOR
 O. OSOU BETA-BHC
                                                                   ENDRIN KETONE
                                                             0.100
 0.050U DELTA-BHC
                                                                   CHLORDANE (TECH. MIXTURE) /1
 0.050UR
        GAMMA-BHC (LINDANE)
                                                             0.500
                                                                   GAMMA-CHI ORDANE
 0.050U HEPTACHLOR
                                                             0.50U
                                                                   ALPHA-CHLORDANE
 O. OSOU ALDRIN
                                                             1.00
                                                                   TOXAPHENE
                                                                   PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
PCB-1232 (AROCLOR 1232)
PCB-1242 (AROCLOR 1242)
        HEPTACHLOR EPOXIDE
ENDOSULFAN I (ALPHA)
 0.0500
                                                             0.500
                                                             0.50Ú
 0.050U
  0. 100
                                                             0.50V
        DIELDRIN
  0.10U 4.4'-DDE (P.P'-DDE)
                                                             Ö. 500
                                                                   PCB-1248 (AROCLOR 1248)
PCB-1254 (AROCLOR 1254)
  O 100 ENDRIN
                                                             0.500
       ENDOSULFAN II (BETA)
  0.100
                                                              1.00
  0.10U 4.4'-DDD (P.P'-DDD)
                                                                   PCB-1260 (AROCLOR 1260)
                                                              1.00
  O. 100 ENDOSULFAN SULFATE
  0.10U 4.4'-DDT (P.P'-DDT)
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REMARKS

REMARKS

^{*}NA-NOT ANALYZED *A-AVERAGE VALUE *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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ANCIAL C DATA DEPONT	07/20/00
METALS DATA REPORT	* * * * * * * * * * * * * * * * * * * *
** PROJECT NO. 88-373 SAMPLE NO. 26450 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH	**
** SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG ST: SC	**
** STATION ID: SW-01 COLLECTION START: 06/02/88 STOP: 00/00/	
** CASE NUMBER: 9702 SAS NUMBER: MD NUMBER: J305	**
- 11 - 112 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
UG/L ANALYTICAL RESULTS UG/L ANALYTICAL RESULTS	
170UJ ALUMINUM 26 MANGANESE	
40UJ ANTIMONY O, 20 MERCURY	
3Ŭ ARSENIC 40Ŭ NICKEL	
30 BARIUM 2400 POTASSIUM	
2U BERYLLIUM 3U SELENIUM	
4U CADMIUM 6U SILVER	
23000 ČÁLCIUM 8900 SODIUM	
9U CHROMIUM 3U THALLIUM	
20U COBALT NA TIN 5U COPPER 8U VANADIUM	
1000J IRON 30UJ ZINC	
2U LEAD	
1800 MAGNESIUM	

REMARKS

REMARKS

^{*}A-AUTRAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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METALS DATA REPORT	EIN REGION IT ESD, MITTERS, CA.	07/20/00
** PROJECT NO. 88-373 SAMPLE NO. 26457 SAMPLE SOURCE: CHAMPION INTERNATION STATION ID: SW-02 CASE NUMBER: 9702 SAS NUMBER:		COLLECTED BY: A SPAUGH *** O6/02/88 STOP: 00/00/00
UG/I. ANALYTICAL RESULTS 5300 ALUMINUM 40U ANTIMONY 7JN ARSENIC 190 BARIUM 2U BERYLLIUM 4U CADMIUM 30000 CALCIUM 9U CHROMIUM 14U COBALT 5U COPPER 2900J IRON 10U LEAD 3000 MAGNESIUM	UG/L 130 MANGANESE 0.2U MERCURY 40U NICKEL 96000 POTASSIUM 3U SELENIUM 6U SILVER 440000 SODIUM 3U THALLIUM NA TIN 22 VANADIUM 30UJ ZINC	ANALYTICAL RESULTS

REMARKS

REMARKS

FOOTNOTES *A-ACTUAL VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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METALS DATA REPORT	CPA-REGION IV ESD, ATTIENS, GA.	07/20/80
** PROJECT NO. 88-373 SAMPLE NO. 26452 SAMPLE	TYPE: SURFACEWA PROG ELEM: NSF	COLLECTED BY: A SPAUGH **
** SOURCE: CHAMPION INTERNATION	CITY: ORANGEBURG	ST: SC **
** STATION ID: SW-03	COLLECTION START:	06/02/88 STOP: 00/00/00 ***
** CASE NUMBER: 9702 SAS NUMBER:	MD NUMBER: J308	\$107 , \text{\$17, \text{\$17
**	mo nomben, out	11
*** * * * * * * * * * * * * * * * * * *		
UG/I ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
100UJ ALUMINUM	26 MANGANESE	
40U ANTIMONY	O. 2U MERCURY	
3U ARSENIC 3D BARIUM 2U BERYLLIUM 4U CADMIUM	40U NICKEL	
30 BARIUM	2700 POTAŠŠIUM	
2U BERYLLIUM	3U SELENIUM	
4U CADMIUM	6U SILVER	
23000 CALCIUM	8600 SODIUM	
9U CHROMIUM	3U THALLIUM	
13U COBALT	NA TIN BU VANADIUM	
5U COPPER	8U VANADIUM	
950J IRON	20U ZINC	
3UJ LEAD 2000 MAGNESIUM		
ZOOO MAGNESIUM		

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED, THE NUMBER IS THE MINIMUM QUANTITATION LIMIT,

*R-QC INDICATES THAT DATA UNUSABLE, COMPOUND MAY OR MAY NOT BE PRESENT, RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/20/88

METALS DATA REPORT		• · · · · · · · · · · · · · · · · · · ·		,,
PROJECT NO. 88-37: SOURCE: CHAMPION : STATION ID: SB-01 CASE NUMBER: 970:	INTERNATION	CIT	G ELEM: NSF COLLECTED BY: A SPA Y: ORANGEBURG ST: SC	** * * * * * * * * * * * * * * * * * *
MG/KG 13000 8.2UR ANTIMONY 9.8JN ARSENIC 10 BARIUM 0.42U BERYLLIUM 0.72U CADMIUM 420 CALCIUM 16 CHRONIUM 3.1U COBALT 1.1UJ COPPER 17000 IRON 6.5J LEAD 140J MAGNESIUM	ANALYTICAL RESULTS	MG/KG 0.79U 0.12U 8U 350U 0.7UR 1.3U 30U 0.7UJ NA 41 8UJ		

REMARKS

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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METALS DATA REPORT	EPA-REGION IV ESD, ATHE	NS, GA.	0//20/88
	CITY: COLLE	ELEM: NSF COLLECTED BY: A SPAUG ORANGEBURG ST: SC CTION START: 06/02/88 STOI UMBER: J303	P: 00/00/00
MG/KG ALUMINUM 9UR ANTIMONY 0.76UR ARSENIC 3.3U BARIUM 1UJ BERYLLIUM 0.78U CADMIUM 170UJ CALCIUM 2.7 CHROMIUM 3.4U COBALT 11 COPPER 460 IRON 1.6J LEAD 50U MAGNESIUM	MG/KG 3UJ 0.13U 8.7U 380U 2UJ 1.4U 30U 0.76UJ NA 1.9U 20UJ 21	ANALYTICAL RESULTS MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM THALLIUM TIN VANADIUM ZINC PERCENT MOISTURE	• • • • • • • • • • • • • • • • • • • •

REMARKS

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** STAT		INTERNATION	D. 26448 SAMP	LE TYPE: SOIL	CITÝ: COLLE	ELEM: NSF COLLEC ORANGEBURG CTION START: 06/02, UMBER: J304	TED BY: A SPAUGH ST: SC /88 STOP:	00/00/00
MG/KG 2700 7.20R 0.81JN 30 0.37U 0.63U 720 4.7 2.7U 1UJ 2700 13J 120J	ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM	ANALYTICAL	RESULTS	•••••	# # # # # MG/KG 43J 0.10 70 3100 0.610R 1.10 300 0.610J NA 7.9 200J 01	MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM THALLIUM TIN VANADIUM ZINC PERCENT MOISTURE	TICAL RESULTS	• • • • • • • • • • • • • • • • • • • •

REMARKS

REMARKS

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07/20/88

** SOUR	TA REPORT ECT NO. 88-373 CE: CHAMPION IN ION ID: CS-02 NUMBER: 9702	SAMPLE NO. 26454 ITERNATION SAS NUMBER	PROG ELE CITY: OR COLLECTI MO NUMB	M: NSF COLLECTED BY: ANGEBURG ST: ON START: 06/02/88 ER: J309	A SPAUGH *** SC *** STOP: 00/00/00 ***
*** * * * * * MG/KG 4200 7.2UR 6.7JN 160 0.37U 2.6 1400 36 2.7U 6.2J 11000 55J	ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM CADMIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGMESTUM	ANALYTICAL RESULTS	0.10 ME 70 NI 3100 PO 10J SE 1.10 SI 400J SO 0.610J TH NA TI 16 VA 240J ZI	ANALYTICAL RE NGANESE RCURY CKEL TASSIUM LENIUM LENIUM LVER DIUM NALLIUM N NADIUM NC RCENT MOISTURE	SULTS

REMARKS

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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	EPA-REGION IV ESD, ATHE	NS, GA.	07/20/66
METALS DATA REPORT ** PROJECT NO. 88-373 SAMPLE NO. 26459 SAMPLE ** SOURCE: CHAMPION INTERNATION ** STATION ID: SB-02 ** CASE NUMBER: 9702 SAS NUMBER:	CITY: COLLE	ELEM: NSF COLLECTED BY: A SPAUGORANGEBURG ST: SC CTION START: 06/02/88 STGUMBER: J314	GH ::
MG/KG ANALYTICAL RESULTS 5600 ALUMINUM 7.7UR ANTIMONY 6.7JN ARSENIC 8.7 BARIUM 0.39U BERYLLIUM 0.67U CADMIUM 5.0UJ CALCIUM 20U CHROMIUM 2.9U COBALT 1UJ COPPER 6000 IRON 2.9J LEAD 40U MAGNESIUM	MG/KG 0.74UJ 0.71U 7.5U 330U 2UJ 1.2U 70UJ 0.65UJ NA 16 7UJ 08	ANALYTICAL RESULTS MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM THALLIUM TIN VANADIUM ZINC PERCENT MOISTURE	• • • • • • • • • • • • • • • • • • • •

REMARKS

REMARKS

^{***}FOOTNOTES***

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METALS DATA REPORT	EPA-REGION IV ESD, ATHE	NS, GA.	07/20/88
	CITY: COLLE	ELEM: NSF COLLECTED BY: A SPAU ORANGEBURG ST: SC	GH *** OP: 00/00/00
MG/KG ALUMINUM 9.7UR ANTIMONY 2UJ ARSENIC 19 BARIUM 0.49U BERYLLIUM 1UJ CADMIUM 350UJ CALCIUM 2.4U CHROMIUM 3.7U COBALT 1.3U COPPER 1200 IRON 2.3J LEAD 64 MAGNESIUM	MG/KG 10 0.14U 9.5U 410U 0.82UR 1.5U 320UJ 0.82UJ NA 3.7 20UJ 27	ANALYTICAL RESULTS MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM THALLIUM TIN VANADIUM ZINC PERCENT MOISTURE	

REMARKS

REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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METALS DATA I	DEDODT			CLW-KEGTOM	IV LOU, AIR	ILNS, UA.		07/20/66
	REPURI							
*** * * * * * *		CAMP) E NO	DEAES SAMO	E TUDE. COLL	DDO	ELEM. NCE	COLLECTED BY. A CDAU	
	NO. 88-373). 26456 S am Pli	E LANE: SOTE	CITA	ELEM: NSF (COLLECTED BY: A SPAU	
** SOURCE:	CHAMPION I	NIEKNAIION			CITY	: ORANGEBURG	ST: SC	4.5
** STATION	ID: SB-03				COLL	ECTION START:	06/02/88 St	OP: 00/00/00 **
	MBER: 9702	SAS	NUMBER:		MU	NUMBER: J312		**
**								**
*** * * * * *						* * * * * * *		
MG/KG		ANALYTICAL R	ESULTS		MG/KG		ANALYTICAL RESULTS	
6900 AL	UMINUM				3UJ	MANGANESE		
BUR AN'	TIMONY				0.110	MERCURY		
1.6JN AR	SĒNĪC				7.8U	NĪCKEL		
9.6 BAI	ŘÍÚM				340Ü	POTASSIUM		
0.4U BEI 0.7U CAI	RYLLIUM				0.67UR	SELENIUM		
ĎŽŪ ČÃI	DMI UM				1.20	SILVER		
2100J ČĀ	LĈĪŬ M				ĠŎŨĴ	SÖDÍÜM		
	ROMIUM				0.67UJ	THALLIUM		
3u CO	BALT				NA NA	TIN		
1.10J CO	PPER				19	VANADIUM		
					6111			
	ON				e์กำ	ZINC	CTUDE	
	AD				11	PERCENT MOIS	DIVE	
78 M Ā	GNESIUM							

REMARKS

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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METALS DATA REPORT	ETA NEGION IT ESD, ATTIENS, GA.	07/20/00
** PROJECT NO. 88-373 SAMPLE NO. 26453 SAMPLE SOURCE: CHAMPION INTERNATION STATION ID: SD-03 CASE NUMBER: 9702 SAS NUMBER:	TYPE: SEDIM PROG ELEM: NSF COLL CITY: ORANGEBURG COLLECTION START: 06/MD NUMBER: J307	ECTED BY: A SPAUGH *** ST: SC *** 02/88 STOP: 00/00/00
MG/KG ALUMINUM 9.3UR ANTIMONY 0.78UR ARSENIC 3.4U BARIUM 1UJ BERYLLIUM 0.81U CADMIUM 130UJ CALCIUM 2.3U CHROMIUM 3.5U COBALT 1.2U COPPER 660 IRON 3J LEAD 50U MAGNESIUM		ALYTICAL RESULTS

REMARKS

REMARKS

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07/20/88

METALS DATA REPORT PROJECT NO. 88-373 SAMPLE NO. 26455 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH ** SOURCE: CHAMPION INTERNATION STATION ID: SS-03 CASE NUMBER: 9702 CITY: ORANGEBURG COLLECTION START: 06/02/88 MD NUMBER: J311 ST: SC ** STOP: 00/00/00 SAS NUMBER: * * * * .. * * MG/KG ANALYTICAL RESULTS MG/KG ANALYTICAL RESULTS MANGANESE 4700 **ALUMINUM** 37J

7. 3UR ANTIMONY 0.10 MERCURY 2.8JN **ARSENIC** 7.10 NICKEL 70 BARIUM POTASSIUM 3100 0.370 BERYLLIUM CADMIUM 0.62UR SELENTUM 1 U J SILVER 1.10 CALCIUM CHROMIUM 4000 1100 SODIUM 8.7 0.62UJ THALLIUM 2.70 COBALT TIN NA 2.3J COPPER 12 VANADIUM 5400 IRON 50UJ ZINC LEAD ÕŽ PERCENT MOISTURE 14J

REMARKS

200

MAGNESIUM

REMARKS

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07/20/88

METALS DATA REPORT			,	,
** PROJECT NO. 88-373 ** SOURCE: CHAMPION I	SAMPLE NO. 26464 SAMPL	E TYPE: SOIL PROG	ELEM: NSF COLLECTED BY: A SPAL ORANGEBURG ST: SC	: • • • • • • • • • • • • • • • • • • •
** STATION ID: SS-04 ** CASE NUMBER: 9702		COLLE		TOP: 00/00/00 **
	ANALYTICAL RESULTS	MG/KG 140J 0.11U 23 320U 2UJ 1.2U 60UJ 0.64UJ NA 8.5 83J 06	ANALYTICAL RESULTS MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM THALIUM TIN VANADIUM ZINC PERCENT MOISTURE	• • • • • • • • • • • • • • • • • • • •

REMARKS

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUF *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26449 SAMPLE TYPE: SOIL

SAS NO.:

PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG

ST: SC

SOURCE: CHAMPION INTERNATION STATION ID: SB-01 CASE.NO.: 9702 SAS

COLLECTION START: 06/02/88

STOP: 00/00/00

MD NO: J306

RESULTS UNITS PARAMETER 0.580 MG/KG CYANIDE

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC PROJECT NO. 88-373 SAMPLE NO. 26451 SAMPLE TYPE: SEDIM ** SOURCE: CHAMPION INTERNATION STATION ID: SD-01 CASE.NO.: 9702 SAS COLLECTION START: 06/02/88
D. NO.: * * ** STOP: 00/00/00 ** ** MD NO: J303 SAS NO.: * *

RESULTS UNITS PARAMETER 0.63U MG/KG CYANIDE

^{*}A AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE SOURCE: CHAMPION INTERNATION STATION ID: SS-01 CASE.NO.: 9702 SAS PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: SAMPLE NO. 26448 SAMPLE TYPE: SOIL

STOP: 00/00/00 ** * * SAS NO.: D. NO. : MD NO: J304

> RESULTS UNITS PARAMETER 0.51U MG/KG CYANIDE

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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SPECIFIED ANALYSIS DATA REPORT PROJECT NO. 88-373 SAMPLE NO. 26454 SAMPLE TYPE: SOIL ..

SAS NO.:

SOURCE: CHAMPION INTERNATION STATION ID: CS-02

CASE . NO.: 9702

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PROG ELEM: NSF COLLECTED BY: A SPAUGH

CITY: ORANGEBURG COLLECTION START: 06/02/88 ST: SC STOP: 00/00/00

MD NO: J309 D. NO.:

RESULTS UNITS PARAMETER MG/KG CYANIDE 5.5

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26459 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: SB-02 CASE.NO.: 9702 SAS

SAS NO.:

PROG ELEM: NSF COLLECTED BY: A SPAUGH

COLLECTION START: 06/02/88
D. NO.:

STOP: 00/00/00 MD NO: J314

RESULTS UNITS PARAMETER 0.540 MG/KG CYANIDE

^{*}A AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

D. NO.:

MD NO: J310

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

SAS NO.:

PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26458 SAMPLE TYPE: SEDIM SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG ST: SC * * COLLECTION START: 06/02/88 STATION ID: SD-02 CASE.NO.: 9702 STOP: 00/00/00

> RESULTS UNITS PARAMETER 0.68U MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 88-373 SAMPLE NO. 26456 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH ST: SC STOP: 00/00/00 MD NO: J312 CITY: ORANGEBURG

SOURCE: CHAMPION INTERNATION STATION ID: 58-03 CASE.NO.: 9702 SAS COLLECTION START: 06/02/88

* * SAS NO.: D. NO.: * * * * . .

> RESULTS UNITS PARAMETER 0.560 MG/KG CYANIDE

FOOTNOTES *A AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26453 SAMPLE TYPE: SEDIM SOURCE: CHAMPION INTERNATION STATION ID: SD-03 PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP:

STOP: 00/00/00 CASE NO.: 9702 D. NO. : MD NO: J307 SAS NO.:

> RESULTS UNITS PARAMETER 0.650 MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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SPECIFIED ANALYSIS DATA REPORT

CASE NO.: 9702

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PROJECT NO. 88-373 SAMPLE NO. 26455 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: \$5-03

SAS NO.:

PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC

ST: SC

COLLECTION START: 06/02/88 STOP: 00/00/00 D. NO. : MD NO: J311

RESULTS UNITS PARAMETER 0.51V MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 88-373 SAMPLE NO. 26464 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: SS-04 CASE.NO.: 9702 SAS NO.:

PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG

ST: SC STOP: 00/00/00

COLLECTION START: 06/02/88 D. NO.:

MD NO: J315

RESULTS UNITS PARAMETER 0.53U MG/KG CYANIDE

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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SPECIFIED ANALYSIS DATA REPORT PROJECT NO. 88-373 SAMPLE NO. 26450 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH SOURCE: CHAMPION INTERNATION ST. SC COLLECTION START: 06/02/88 STOP:

SAS NO.:

SOURCE: CHAMPION INTERNATION STATION ID: SW-01 CASE.NO.: 9702 SAS STOP: 00/00/00 MD NO: J305

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D. NO.:

RESULTS UNITS PARAMETER 0.01UJ MG/L CYANIDE

REMARKS HOLDING TIME EXCEEDED-CN

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REMARKS

FOOTNOTES *A-AVERÂGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26457 SAMPLE TYPE: SURFACEWA
SOURCE: CHAMPION INTERNATION
STATION ID: SW-02
PROJECT NO. 88-373 SAMPLE NO. 26457 SAMPLE TYPE: SURFACEWA
CITY: ORANGEBURG
COLLECTION START: 06/02/88 STOP: 00/00/00

SOURCE: CHAMPION INTERNATION STATION ID: SW-02 CASE.NO.: 9702 SAS

SAS NO.:

MD NO: J313

D. NO. ;

RESULTS UNITS PARAMETER O.01UJ MG/L CYANIDE

REMARKS HOLDING TIME EXCEEDED-CN ***REMARKS***

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26452 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH SOURCE: CHAMPION INTERNATION ST: SC

SOURCE: CHAMPION INTERNATION STATION ID: SW-03 CASE.NO.: 9702 SAS ST: SC STOP: 00/00/00 COLLECTION START: 06/02/88 MD NO: J308 SAS NO.: D. NO.:

RESULTS UNITS PARAMETER 0.01UJ MG/L CYANIDE

REMARKS HOLDING TIME EXCEEDED-CN

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRÉSUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.



APPENDIX B

SUMMARY OF GEOPHYSICAL METHODS

The following sections are from "Geophysical Techniques for Sensing Buried Wastes and Waste Migration" by Glaccum, R. A., and M. R. Noel, August, 1983, Technos, Inc., for Environmental Monitoring Systems Laboratory, ORD., USEPA, Las Vegas, Nevada.

ELECTROMAGNETICS (EM)*

The electromagnetic (EM) method provides a means of measuring the electrical conductivity of subsurface soil, rock, and ground water. Electrical conductivity is a function of the type of soil and rock, its porosity, its permeability, and the fluids which fill the pore space. In most cases the conductivity (specific conductance) of the pore fluids will dominate the measurement. Accordingly, the EM method is applicable both to assessment of natural geohydrologic conditions and to mapping of many types of contaminant plumes. Additionally, trench boundaries, buried wastes and drums, as well as metallic utility lines can be located with EM techniques.

Natural variations in subsurface conductivity may be caused by changes in soil moisture content, ground water specific conductance, depth of soil cover over rock, and thickness of soil and rock layers. Changes in basic soil or rock types, and structural features such as fractures or voids may also produce changes in conductivity. Localized deposits of natural organic, clay, sand, gravel, or saltrich zones will also affect subsurface conductivity.

^{*}The term electromagnetic has been used in contemporary literature as a descriptive term for other geophysical methods, including GPR and metal detectors which are based on electromagnetic principles. However, this document will use electromagnetic (EM) to specifically imply the measurement of subsurface conductivities by low-frequency electromagnetic induction. This is in keeping with the traditional use of the term in the geophysical industry from which the EM methods originated. While the authors recognize that there are many electromagnetic systems and manufacturers, the discussion in this section is based solely on instruments which are calibrated to read in electrical conductivity units and which have been effectively and extensively used at hazardous waste sites. There is only one manufacturer of such instruments at the time of this writing.

Many contaminants will produce an increase in free ion concentration when introduced into the soil or ground water systems. This increase over background conductivity enables detection and mapping of contaminated soil and ground water at Hazardous Waste Sites (HWS), landfills, and impoundments. Large amounts of organic fluids such as diesel fuel can displace the normal soil moisture, causing a decrease in conductivity which may also be mapped, although this is not commonly done. The mapping of a plume will usually define the local flow direction of contaminants. Contaminant migration rates can be established by comparing measurements taken at different times.

The absolute values of conductivity for geologic materials (and contaminants) are not necessarily diagnostic in themselves, but the variations in conductivity, laterally and with depth, are significant. It is these variations which enable the investigator to rapidly find anomalous conditions.

Since the EM method does not require ground contact, measurements may be made quite rapidly. Lateral variations in conductivity can be detected and mapped by a field technique called profiling. Profiling measurements may be made to depths ranging from 0.75 to 60 meters. The data is recorded using strip chart and magnetic tape recorders. This continuous measurement allows increased rates of data acquisition and improved resolution for mapping small geohydrologic features. Further, recorded data enhanced by computer processing has proved invaluable in the evaluation of complex hazardous waste sites. The excellent lateral resolution obtained from EM profiling data has been used to advantage in efforts to outline closely-spaced burial pits, to reveal the migration of contaminants into the surrounding soil, and to delineate fracture patterns.

Vertical variations in conductivity can also be detected by the EM method. A station measurement technique called sounding is employed for this purpose. Data can be acquired from depths by combining results from a variety of EM instruments, each requiring different field application techniques. Other EM systems are capable of sounding to depth of one-thousand feet or more, but have not yet been used at HWS and are not adaptable to continuous measurements.

Profiling is the most cost-effective use of the EM method. Continuous profiling can be used in many applications to increase resolution, data density, and permit total site coverage at critical sites.

At HWS, applications of EM can provide:

- Assessment of natural geohydrologic conditions;
- Locating and mapping of burial trenches and pits containing drums and/or bulk wastes;
- Determination of flow direction in both unsaturated and saturated zones;
- Rate of plume movement by comparing measurement taken at different times;
- Locating and mapping of utility pipes and cables which may affect other geophysical measurements, or whose trench may provide a permeable pathway for contaminant flow.

Although there is available a wide variety of EM equipment, most of it is intended for geophysical exploration of mineral deposits. These units have not been used at HWS and do not provide a simple conductivity reading. This document discusses only those instruments which are designed and calibrated to read directly in units of conductivity.

Conductance is measured with electronic instrumentation consisting of a transmitter coil and receiver coil. The transmitter coil radiates an electromagnetic field which induces eddy currents in the earth below the instrument. Each of these eddy current loops, in turn, generates a secondary electromagnetic field which is proportional to the magnitude of the current flowing within that loop. A part of the secondary magnetic field from each loop is intercepted by the receiver coil and produces an output voltage which (within limits) is linearly related to subsurface conductivity. This reading is a bulk measurement of conductivity, e.g., the cumulative response to subsurface conditions ranging all the way from the surface to the effective depth of the instrument.

The sampling depth of EM equipment is related to the instrument's coil spacing. Instruments with coil spacings of one, four, ten, twenty, and forty meters are commercially available. The nominal sampling depth of an EM system is taken to be approximately 1.5 times the coil spacing.

The EM sounding method can rarely identify more than two or three layers with reasonable confidence. The greater the contrast in the conductivity values of each layer, the better the results. Often, the more detailed resistivity sounding method is used to complement EM profiling data.

The results of sounding analysis are usually presented as a vertical section, in which the conductivity layers are identified as a function of depth. The analyst may be able to correlate these layers to geohydrologic units believed to exist at the site.

Although the EM technique can be used for profiling or sounding, profiling is the most effective use of the EM method. Profiling makes possible the rapid mapping of subsurface conductivity changes, and the location, delineation, and assessment of spatial variables resulting from changes in the natural setting or from many contaminants.

EM is a very effective reconnaissance tool. The use of qualitative non-recorded data can provide initial interpretation in the field. If site conditions are complex, the use of a high-density survey grid, continuously-recording instruments, and computer processing may be necessary, in order to properly evaluate subsurface conditions. When continuously-recording instruments are used, total site coverage is feasible. More quantitative information can be obtained by using conductivity data from different depth ranges. At present, three different systems must be used to acquire data from 0.75 to 60 meters. Very often, however, data from two standard depths, e.g. six and fifteen meters, is adequate to furnish depth information.

Capabilities

- The EM profile method permits rapid data acquisition, resulting in high-density and high-resolution surveys.
- Profiling data may be acquired from various discrete depths, ranging from 0.75 meters to 60 meters.
- Continuously-recording instruments (to fifteen meter depth) can increase survey speed, density, and resolution permitting total site coverage, if required.
- EM reads directly in conductivity units (mm/m) permitting use of raw data in the field, and correlation to specific conductance of ground water samples.
- EM can map local and general changes in the natural geohydrologic setting.
- EM can detect and measure the boundaries of a conductivity plume.
- Direction of plume flow can be determined from an EM conductivity map.
- EM measurements taken at different times can provide the means to compute movement rates of conservative contaminants.
- EM can detect and map burial pits and trenches of both bulk and drummed wastes.
- EM can detect and map the location of buried metallic utility lines.

Limitations

- EM has less sounding (vertical) resolution than the resistivity method due to its limited number of depth intervals.
- The acquisition of data from depths of 0.75 to 60 meters requires the use of three different EM systems.
- Continuous data can be obtained only to depths up to approximately fifteen meters.
- An EM measurement is influenced by the shallower materials more than the deeper ones; this
 must be considered when evaluating the data.
- EM measurements become non-linear in zones of very high conductivity.
- The EM method is susceptible to noise from a number of sources, including natural atmospheric noise, powerlines, radio transmitters, buried metallic trash, pipes, cables, nearby fences, vehicles, and buildings.

MAGNETOMETER

Magnetic measurements are commonly used to map regional geologic structure and to explore for minerals. They are also used to locate pipes and survey stakes or to map archeological sites. They are commonly used at HWS to locate buried drums and trenches.

A magnetometer measures the intensity of the earth's magnetic field. The presence of ferrous metals creates variations in the local strength of that field, permitting their detection. A magnetometer's response is proportional to the mass of the ferrous target. Typically, a single drum can be detected at distances up to six meters, while massive piles of drums can be detected at distances up to twenty meters or more.

Some magnetometers require the operator to stop and take discrete measurements; other instruments permit the acquisition of continuous data as the magnetometer is moved across the site. This continuous coverage is much more suitable for high resolution requirements and the mapping of extensive areas.

The effectiveness of a magnetometer can be reduced or totally inhibited by noise or interference from time-variable changes in the earth's field and spatial variations caused by magnetic minerals in the soil, or iron and steel debris, ferrous pipes, fences, buildings, and vehicles. Many of these problems can be avoided by careful selection of instruments and field techniques.

At HWS, magnetometers may be used to:

- Locate buried steel containers, such as 55-gallon drums;
- Define boundaries of trenches filled with ferrous containers;
- Locate ferrous underground utilities, such as iron piles or tanks, and the permeable pathways
 often associated with them;
- Select drilling locations that are clear of buried drums, underground utilities, and other obstructions.

A magnetometer measures the intensity of the earth's magnetic field. Variations in this field may be caused by the natural distribution of iron oxides within the soil and rock or by the presence of buried iron or steel objects. (The magnetometer does not respond to nonferrous metals such as aluminum, copper, tin, and brass).

The earth's magnetic field behaves much as if there were a large bar magnet embedded in the earth. Although the earth's field intensity varies considerably throughout the United States, its average value is approximately 50,000 gammas.* The angle of the magnetic field with respect to the earth's surface also varies. In the U.S., this angle of inclination ranges approximately sixty to seventy-five degrees from the horizontal.

The intensity of the earth's magnetic field changes daily with sunspots and ionospheric conditions which can cause large and sometimes rapid variations. With time, these variations produce unwanted signals (noise) and can substantially affect magnetic measurements.

If the magnetic properties of the soil and rock were perfectly uniform, there would be no local magnetic anomalies; however, a concentration of natural iron minerals, or a buried iron object, will cause a local magnetic anomaly which can be detected at the surface.

Typical magnetic anomalies at HWS will range from one to hundreds of gammas for small discrete targets, depending on their depth. Massive piles of buried drums will result in anomalies of from one-hundred to one-thousand gammas or more.

*The unit of magnetic measurement is the gamma. Recently, the gamma unit has been renamed the Nano Tesla. At this time, most instruments are still labeled in gammas, as are specification sheets, existing literature, and field data; hence all references to magnetic data in this document are expressed in gammas.

While several factors influence the response of a magnetometer, the mass of a buried target and its depth are the most important. A magnetometer's response is directly proportional to the mass of ferrous metal present and varies by one over the distance cubed (1/d³) for total measurements. If a gradiometer is used, the response falls off even faster, as one over the distance to the fourth power (1d⁴). With sensors of equal sensitivity, the total field system provides the greater working range. Typically a single drum can be detected at distances up to six meters or more. There is a wide variety of magnetometers available commercially; specific performance is highly dependent upon the type of magnetometer and the field conditions. Theoretically, the number of drums may be calculated, however, such results should be considered only approximations because of the number of variables associated with targets, site conditions, and calculations. Actual results may vary considerably.

A magnetometer with continuous recording capabilities can be used to produce a strip chart of the field data, which is helpful in assessing signal-to-noise ratio, anomaly shape, target location, and provides a means of exercising quality control over field data. This continuous coverage is much more suitable for high-resolution requirements and the mapping of extensive areas.

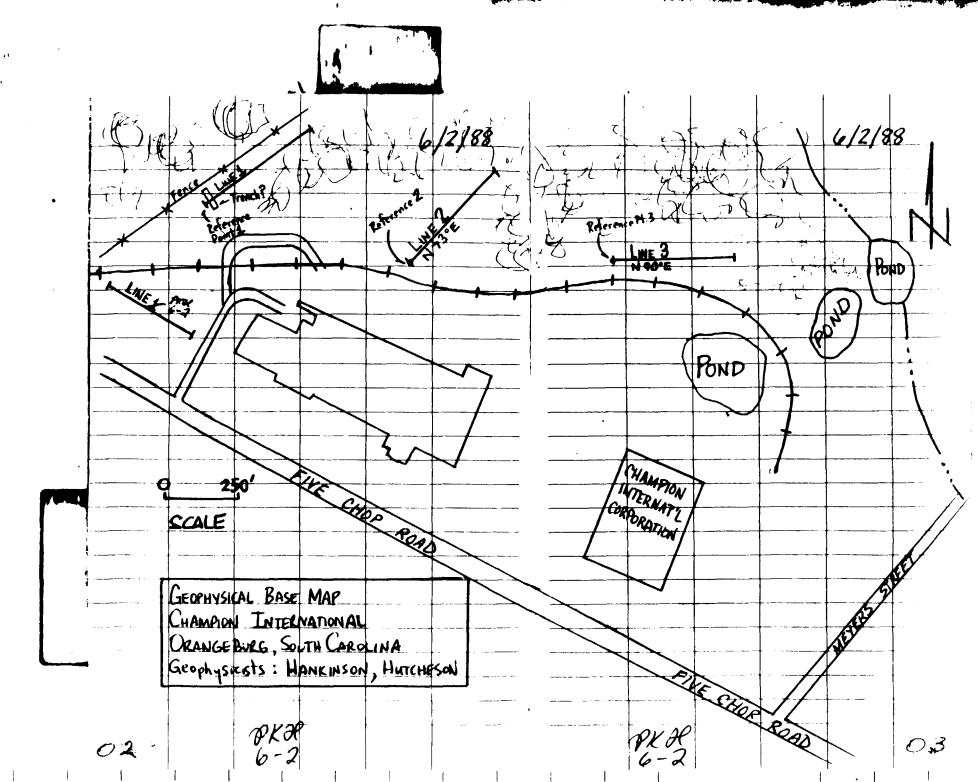
The effectiveness of a magnetometer can be reduced or totally inhibited by noise or interference from time-variable changes in the earth's field and spatial variations caused by magnetic minerals in the soil, or iron and steel debris, ferrous pipes, fences, buildings, and vehicles. Many of these problems can be avoided by careful selection of instruments and field techniques.

Capabilities

- Magnetometers respond to ferrous metals (iron or steel) only.
- Individual drums can be detected at depths up to six meters.
- Large masses of drums can be detected at depths of six to twenty meters.
- Magnetometers can provide a greater depth range than metal detectors.
- Interpretation of their data may be used to provide estimates of the number and depth of buried drums.
- They can provide a continuous response along a traverse line.
- They may be mounted on vehicles for coverage of a large site.

Limitations

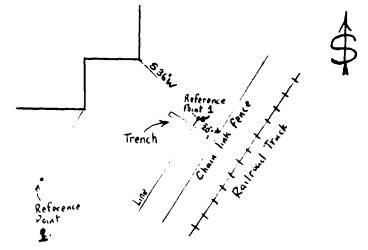
- In general, magnetometers are susceptible to noise from many different sources, including steel fences, vehicles, buildings, iron debris, natural soil minerals, and underground utilities.
- Low cost units are limited in depth range (but their limitations make them insensitive to many of the above sources of noise).
- Total field instruments are also sensitive to fluctuations in the earth's magnetic field which can seriously affect data.
- Data is of limited use in determining the number and depth of targets.
- Complex site conditions may require the use of highly skilled operators, special equipment, and the recording and processing of data, along with skilled interpretation.



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Ref. Pt. 1

REC	STA	TION	READING	SCALE	CORRECTED	
#	X E	SHUT#	READING	JCALE	VALUE	
1		0	0.74	100	74	0.72(100)EW
2		i	0,82	100	82	0.85(100) EW
3		2	0.90	100	90	0.96(100) EW
4		3	0.32	300	96	_
5		4	0.32	300	96	0.36 (300) EW
6		5	5,32	300	96	0.36 (300) EW
7		6	0.37	300	111	0,43 (300) EW
8		7				
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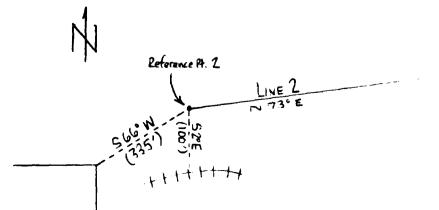
page of

EM RECORDING SHEET

Ref. Pt. 2

REC	STATION		READING	SCALE	CORRECTED	
#	LINE	SHOT #	READING	JCALE	VALUE	
1	2	0	0.20	100	20	
2	2	1	0.26	100	26	
3	2	2	0.36	100	36	
4	2	3	Z 0.06	1000	<0	
5	2	4	0.39	100	39	
6	2	5	0.26	100	26	
7	2	6	0.39	100	39	
8	2	7	∠ 0.00	1000	< 0	
9	2	8	< 0.00	1000	<0	
0	2	9	0.56	100	56	
1	2	10	0.52	(00	52	
2	2	11	0.46	100	46	
3	2	12	0.40	100	40	
4	2	13	0.45	100	45	
5	•					
6						
7						
8						
9						
0						

metal debris 0.32 (100) EN 20 (1000) EVV 0.44 (120) EW 0.26 (100) <0(1000) 0.48(100) 0.48(100)

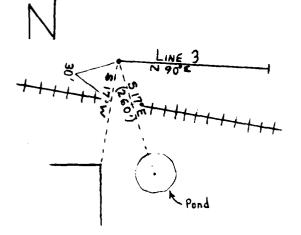


page ___of __

LINE 3 EM RECORDING SHEET

Ref. Pt. 3

EC	STATION		READING	SCALE	CORRECTED
#	LINE	SHUT PT.	READING	JCALE	VALUE
1	3	0	0.29	100	28
2	3		0.22	100	22
3	3	2	0.12	300	36
4	3_	3	0. 28	100	28
5	3	4	0.32	300	96
6	3	5	0.58	300	174
7	3	6	0.52	300	156
8	3	7	0.54	300	162
9	3	8	0.33	300	99
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Appendix C

OVERSIZED DOCUMENT

- 100 A

Appendix D



Site Inspection Report

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POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 2 - WASTE INFORMATION

	TERCATION
OI STATE	DC03342177
30	DC03342.177

D	M		PART 2-WAST	E INFORMATIO	N	3C DC0	3342177
IL WASTES	TATES, QUANTITIES, AN	O CHARACTER	ISTICS				
	TATES (Cream of the septim	OR WASTE GUANT	TTY AT SITE	03 WASTE CHARACT	TERETICS (Chock at that a	parvi	
2 A 3040	DE SLURRY EL PINES Z'F UQUIO		of white expension of the particular	A TOXIC	ZE SOLU	BLE STHICHLY	VOLATILE
C 8 POWOS	E E GAS	TONS -		E B. CORRE	ACTIVE G FLAM	TTOUS EXPLOS	
30 OTHER		CUBIC YARDS	5	_ 0 PEPE	STENT SHIGHT	MILE I LINCOM	PATIBLE PLICABLE
3001768	Security	NO OF DRUMS	્રેણું				
M. WASTE T	YPE						
CATEGORY	SUBSTANCE N	AME	01 GROSS AMOUNT	D2 UNIT OF MEASURE	03 COMMENTS		
SLU	SLUOGE						
OLW	OLY WASTE		<u> </u>				
9 0L	SOLVENTS						
P90	PESTICIOES		<u></u>				
000	OTHER ORGANIC CH	EMICALS					
ЮС	INORGANIC CHEMIC	ALS					
ACD	ACIDS						
BAS	EASES						
MES	HEAVY METALS						
IV. HAZARO	DUS SUSSTANCES (See As	sends for real frequent	iy sang CAB Numberte				
01 CATEGORY	02 SUBSTANCE N	wal	03 CAS NUMBER	04 STORAGE/DIS	POSAL METHOD	06 CONCENTRATION	Sale Maries
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	<u> </u>						
							
							
							
							
							
			 	 		 	
			 			 	
							
						<u>L</u> _	<u>l</u>
V. PEEDSTO	CKS (the Asserts to the family	~					
CATEGORY	01 (1990)	I MANE	02 CAS NUMBER	CATEGORY	01 PERDATE	OCK NAME	02 CAS NUMBER
FDS				FD6			
FO6				FDS			
FDS				FDS			
FD6				FOS			
VI. SOURCES	OF INFORMATION (CH)	positi referenças, e.g.	Mile Man. Advisor deletron.				

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T	

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION PART 4. PERMIT AND DESCRIPTIVE INSCRIPTIVE

I. IDENT	TEICATION	
OI STATE	02 SITE NUMBER	
Loc U	16.33421	7~!

ALIA	PART 4 - PERMI	T AND DESC	RIPTIVE INFORMAT	rion L	260165342177
H. PERMIT INFORMATION					
THE OF PERMIT SOUED	02 PERMIT HUMBER	OJ DATE ISS	DED OF EXPRATION DATE	05 COMMENTS	
Charles and another	}			}	
TA NPOES		+		<u> </u>	
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IC AM		 -		-	·
ID RCRA				ļ	
E ACRA INTERM STATUS				_	
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I G. STATE SOURS					
TH LOCAL Section					
II OTHER SOME				-	
IJ NOME				1	
IL SITE DESCRIPTION					
13100000000	OZ AMOUNT 03 UNIT 0	OF MEASURE	04 TREATMENT (Chose at the		OS OTHER
A SURFACE IMPOUNDMENT _			A INCENERATION		Z A. BUILDINGS ON SITE
Z'S PILES			E B. UNDERGROUND IN.		
_ D TANK, ABOVE GROUND			ii c chemical/physic ii d. biological	AL .	1
E TANK, BELOW GROUND			E WASTE OIL PROCES	BBNG	OR AREA OF SITE "
Z'F LANOFILL -			F SOLVENT RECOVER		1 2 5
E G LANDFARM -			G. OTHER RECYCLING	VRECOVERY	<u>+3.5</u>
TH OPEN DUMP -		—— :	- H OTHER	Haddyr	
I I OTHER				·	1
. CONTAINMENT		·			
CONTARMENT OF WASTES Crees ever					
] A ADEQUATE, SECURE	C S. MODERATE	I C. MAC	POOR STAUDS	YO MSECU	RE, UNSOUND, DANGEROUS
2 DESCRIPTION OF DRUMS DIKING, UNERS, 8	MANAGORA, ETC.				
V. ACCESSIGNLITY					
01 WASTE EASILY ACCESSIBLE. Z YES	· C NO				
1. SOURCES OF INFORMATION (C40 to	1000 100101000 F (1100 Mis. 1011	W 00705 70070	<u> </u>		



POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER 500 023 342177

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION TIVES __NO

02 DESCRIPTION OF FEDERAL STATE LOCAL REGULATORY ENFORCEMENT ACTION

III. SOURCES OF INFORMATION CAN ADDRESS OF MAIN FIRE SAFERS AND ADDRESS. TERROR

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

OF STATE OF STE NAMES

OCD CC 5-42177

	PART 10 - PAST RESPONSE ACTIVITIES	120 100 334211
PAST RESPONSE ACTIVITIES		
01 TR BARRER WALLS CONSTRUCTED 04 DESCRIPTION	OZ DATE	03 AGENCY
01 I S CAPPING COVERING 04 DESCRIPTION	02 DATE	03 AGENCY
01 T BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE	Q3 AGENCY
01 D U GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	OZ DATE	O3 AGENCY
01 T V BOTTOM SEALED 04 DESCRIPTION	OZ DATE	O3 AGENCY
01 I W GAS CONTROL . 04 DESCRIPTION	O2 DATE	O3 AGENCY
01 I X FIRE CONTROL 04 DESCRIPTION	02 DATE	O3 AGENCY
01 T Y LEACHATE TREATMENT 04 DESCRIPTION	OZ DATE	OS AGENCY.
01 I Z AREA EVACUATED 04 DESCRIPTION	OZ DATE	OS AGENCY
01 = 1 ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 T 2 POPULATION RELOCATED 04 DESCRIPTION	OZ DATE	ò3 AGENCY
01 2 3 OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	OZ DATE	O3 AGENCY

III. SOURCES OF INFORMATION (Crespond reference of 1800 feet seriou analoge resorts

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POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

L IDENTIFICATION

VETA	PART 10 - PAST RESPONSE ACTIVITIES		500 CO 3342117
& PAST RESPONSE ACTIVITIES			
01 C A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 G B. TEMPORARY WATER SUPPLY PROVIDE 04 DESCRIPTION	D 02 DATE	03 AGENCY	
01 G PERMANENT WATER SUPPLY PROVIDE 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 IF WASTE REPACKAGED 04 DESCRIPTION	OZ DATE	O3 AGENCY	
01 T G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	O2 DATE	03 AGENCY	<u> </u>
01 C H ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C I IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 C K IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 IL ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY	
01 3 M. EMERGENCY WANTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 TN CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY	
01 TO EMERGENCY DIKING/SURFACE WATER 04 DESCRIPTION	OVERSION 02 DATE	03 AGENCY	
01 = P CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY	
01 = Q. SUBBURFACE CUTOFF WALL 04 DESCRIPTION	OZ DATE	03 AGENCY	

SEPA		SITE INSP	ZARDOUS WASTE SITE ECTION REPORT TRANSPORTER INFORMATION	1. IDENTIFK	
M. ON-SITE GENERATOR OF WAR	mol Cap	02 D+8 NUMBER			
OJ STREET ACOMESS . 3 des 440 . HE	• 1	04 SIC COOE			
sear Miller	OS STATE	07 ZP COOE			
IL OFF-SITE GENERATORS		02 0+8 NUMBER	O1 NAME		
01 wast					2 0 + 8 NUMBER
STREET ADDRESS #0 des #FO+ pre;		04 SIC CODE	O3 STREET ADDRESS IP O Box. APD # ove.)		04 SIC CODE
05 CITY	06 STATE	07 20 COOS	05 CITY	OG STATE	7 ZP COOE
31 hAMB		02 D+8 NUMBER	01 NAME		02 D+8 NUMBER
3 STREET ADDRESS P.D. Box AFD + orc :		94 SIC CODE	OJ STREET ADDRESS (P.O. Bos. RPD P. sec.)		04 SIC CODE
s ar	DE STATE	07 ZP COOE	06 CITY	OG STATE	7 22 COOE
IV. TRANSPORTERIS)					
1 444		02 D+6 NUMBER	01 NAME	ſ	2 0 + 8 NUMBER
130 + OTA set C + SESPOOR TESTE E		04 SIC CODE	03 STREET ACCRESS (# 0 But APO # sec.)		04 SIC CODE
9 C.*Y	06 STATE	07 2P COOS	os city	OS STATE	77 20 COOE
· wif		02 0+8 NUMBER	O1 NAME		2 0 + 8 NUMBER
) 5" RET ADDRESS # 0 864 MFG # 664		04 BIG COOR	03 STREET ACCRESS . F G BM AFG F ME ;		04 S/C COOE
A 0.19	00 STATE	07 25° COOE	os arv	OG STATE	27 20P COOE
V SOURCES OF INFORMATION CH		\$ 1820 Mile 2010/0 \$141-0	a. 1997bi		
P4 ACRES 2070-13 (7 81)					

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nd hard)	<u> </u>	02 0+8 HUMBER	08 NAME	0	0+6 MUMBER		
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os criv	OS STATE	07 ZP COOR	12 017	13 STATE	4 EP COOL		
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03 STREET ACCRESS (P.O. Box. AFO F. ORL.)		04 SIC COOR	10 STREET ADDRESS (# 0 See AFO F ass :	<u>-</u>	11 SIC CODE		
OS CITY	OS STATE	07 20 COOL	12 CITY	13 STATE	4 ZIP COOE		
N. PREVIOUS OWNER(S) Las room record retain		····	IV. REALTY OWNERS) if species .				
Champion Undernotions		02 0+6 NUMBER	OI NAME	O	2 D + 8 NUMBER		
D3 STREET ADDRESS IP O Box. MFD + one i		04 SIC COOE	O3 STREET ACCRESS IP O Box. MO + INC	,	04 SIC CODE		
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os criv	COSTATE	07 ZP COOE	06 GTV	OG STATE	7 2P COOE		
V. SOURCES OF INFORMATION (CIN MINE	te references.	o i min ur man sas	os. 1004V				
IPA #CRM 2070-13 (7 61)							

SEPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT ART 8 - SAMPLE AND FIELD INFORMATION	DENTIFIC DI STATE OZE	
IL SAMPLES TAKEN				
SAMPLE TYPE	OT NUMBER OF	02 SAMPLES SENT TO		STAND GET AMPLES CO
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SURFACE WATER		impachem - Commiss Krystere To	manuada-	Line Control
WASTE)		
AIR				
RUNOFF				
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50L	10	17 17	1 \	
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V. PHOTOGRAPHS AND 01 TYPE X GROUND C 3 MAPS 04 LG C YES C NO	D MAPS	chuty, md langerature of		

NUS CORPORATION AND S	TELECON NOTE	
CONTROL NO. F4-8801-06	DATE: December 12, 1988	TIME: 1330
DISTRIBUTION:		
Champion International Corpora	tion	
BETWEEN: Ozzie Fogle	OF: Decolam, Inc.	PHONE: (803) 534-2632
AND: Teresa Sawyer, NUS Corpo	oration $\sqrt{\lambda_1^{\prime}}$	<u></u>
DISCUSSION:		
such until August of 1985, when purchased the property Decolam the manufacturing process. The	it was purchased and again names U.S. In is now leasing the property from Ga. Pagere was a vaneer peeling operation in the outside sources and glued the vaneer t	nd U.S. Plywood merged, it remained as Plywood in June of 1988, Georgia Pacific acific. He also gave me some detailes on the early 60's, but this was discontinued. To panelling. Then there was a finishing
ACTION ITEMS:		

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

J. MARION SIMS BUILDING . COLUMBIA, SOUTH CAROLINA 29201 . PHONE 803 758-5654

MESSAGE

REPLY

MS JERRI HIGGINS

US ply wood - Champion INT. ORANGE OURGOATES.C.

NUS Corporarion

CERCLA sire

927 LAKESILE PANKWAY

Reference No. 1

Juire 614 TUCKER GA. 30084

9mmcL88

AFTERNE SPOKE, I CALLED The USPLYWOOD (Champion) PLANT IN ORANGE BURG. I NEEDED TO KNUN TREAR STATUS AS WELL. GAPACIFIC DID BUY TE PLANT AND TEN SHUT IT DOWN. I DON'T KNOW The REASONING FOR RIS. MOSTOR MY CONTACTS WIR The PLANT AN GONE. OZZIE FOBLE, FORMER V.P. + GENERAL MANAGER IS STILL There. A GROWP WENT TO GETTER AND ACRCHASED PART OF The PLANT. IT IS NOW KNOWN AS DECOLAM INC. OZZIE FOGLE IS PRESIDENT or the company only The vinyl cominative Process is in open Arrow.

Ozzie FOGLE, PROSIdONT DECOLAM, INC POB 2126 ORANGE BURG, S.C. 29116-2126

SIGNED CONTINUED

Phone 803-534-2612

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

J. MARION SIMS BUILDING . COLUMBIA, SOUTH CAROLINA 29201 . PHONE 803 758-5654

MESSAGE	REPLY
MS. JEAR I HIGGINS	DATE
9 MAR., 88	
DATE ATTAChed are copies OF Some MA	reniacis which mis no Be Helpful
To you. Columbia punces Their rices.	
Dept. 17, 1974 inspection of "closed" o	
WORKS IN OUR WOMENER (SUM PARSC.) DISTRIC	
BEFORE HE DOESN'T REMEMBER ANYTHING.	1
ec- Report . IN Payeon 2000, They will D	
10 Th 80'S AND 90'S!	
(2) JAN 16, 1981 MEMO REGARDING ESS US 6 (3) WITT DRAWAC REQUESTOF SORTS (JAN 8, 81	WENATON STATUS.
Hr	SIGNED CONTINUED

INSTRUCTIONS TO SENDER

INSTRUCTIONS TO RECEIVER:

THE GLIOW CORY . 2 SEND WHITE AND PINK COPIES WITH CARRON INTACT

1 WHITE BEDLY 2 DETAILS

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

J. MARION SIMS BUILDING . COLUMBIA, SOUTH CAROLINA 29201 . PHONE 803 758-5654

MESSAGE	REPLY
MS JURNI HIGGINS	DATE
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South Carolina Department of Health and Environmental Control.

BOARD
William M. Wilson, Chairman
J. Lorin Mason, Jr., M.D., Vice-Chairman
I. DeQuincey Newman, Secretary
Leonard W. Douglas, M.D.
George G. Graham, D.D.S.
Michael W. Mims
Barbara P. Nuessle

COMMISSIONER
Robert 8. Jackson, M.D.
2600 Bull Street
Columbia, S. C. 29201

January 16, 1981

Mr. Jim Thompson Champion International Corporation Knightsbridge Hamilton, Ohio 45020

RE: Hazardous Waste Facility Permit Applications

Dear Mr. Thompson:

This office has received your letters of January 8, 1981 requesting that the hazardous waste permit applications for the Catawba, Newberry, and Orangeburg Plants be amended to show the status of the facility as a generator only. In accordance with your request, this has been accomplished. Further, the notification forms for these facilities will be amended to be consistent with the permit applications. If at some future date the status of these facilities revert to that of a treatment, storage, or disposal facility, the permit review process can be initiated upon notification from your company or the affected plants.

Thank you for your cooperation in this matter.

Sincerely,

C. allen M'Entre

C. Allen McEntire
Facilities Evaluation Section
Bureau of Solid and Hazardous
Waste Management

CAM: dhs

cc: Boyce Faulkner
Jim Moseley
James Burckhalter

Champion

Champion International Corporation

Mr. Hartsill W. Truesdale, P.E., Director Solid and Hazardous Waste Management Division 2600 Bull Street Columbia, South Carolina 29201 January 8, 1981

Re: South Carolina Hazardous
Waste Permit Application

Dear Mr. Truesdale:

On September 26, 1980, a completed Hazardous Waste Facility Permit application was submitted to the State of South Carolina for our Champion Building Products' Orangeburg, South Carolina facility. At that time the facility was designated as a generator engaged in the treatment, storage, and disposal of hazardous waste.

After further review of the amount of hazardous waste generated at this facility and the methods of disposal used, it was determined that all hazardous waste would be removed from the plant site within the 90 day period as referenced in the State and Federal Hazardous Waste Regulations governing generators of hazardous waste. On November 12, 1980, a second notification was filed with the EPA designating this facility as a generator of hazardous waste.

We received a letter from your office on October 13, 1980, stating that our application had been received and was being evaluated. At this time we would like to request that the present state application be amended to show the status of the facility as that of a hazardous waste generator only.

Sincerely,

/im Thompson, Assistant Manager Eastern Environmental Affairs

Solid Wood Products

mg.

cc: Larry Fields Chris Julian / Fred Rigden

South Carolina Department of Health and Environmental Control

2600 Bull Street Columbia, S.C. 29201

Commissioner Robert S. Jackson, M.D.



Board Moses H. Clarkson, Jr., Chairman Leonard W. Douglas, M.D., Vice-Chairman Barbara P. Nuessie, Secretary Gerald A. Kaynard Oren L. Brady, Jr. James A. Spruill, Jr. William H. Hester, M.D.

MEMORANDUM

DATE:

March 15,1984

TO:

Phillip Prater

Facility Compliance Section

Bureau of Solid & Hazardous Waste

FROM:

James M. Burckhalter, EQM & M burchhalta Lower Savannia

Lower Savannah District EQC

Champion Building Products, Orangeburg, S. C.

Generator Inspection; I. D. #SCD003342177

On March 7, 1984, a visit was made to the above plant for the purpose of determining compliance with the requirements of the South Carolina Hazardous Waste Regulations. Mr. Chris Julian, Manager, Finishes Laboratory, primarily represented the company.

The Champion plant produces home panelling. The resulting waste streams are mainly glue and solvents.

Champion's pre-finish waste consists of solvents from wash machines. Approximately 4700 gallons per year are handled by M & J Solvents of Atlanta, Georgia. Pick-up is in less than 90 days.

Champion's next waste stream is from the vinyl laminating line and consists of waste glue and wash up solvents. The result is a solid with some liquid on top. This material is disposed of at Chemical Waste Management's Alabama site. One hundred eighty (180) drums have been shipped since July, 1983.

Five to six drums (high estimate) of cured urea-formaldehyde glue is disposed of at the county landfill each month. A refrigerated recovery system has greatly reduced generation of this glue waste. Some of the urea-formaldehyde glue waste is mixed with wood chips, and the resulting solid is burned in the plant's wood-fired boiler. The Bureau of Air Quality Control is aware of the practice.

All manifests examined appeared to be in order. Accumulation times seemed acceptable. Plant officials stated that quarterly reports are being submitted to central office. At present, contingency fund requirements do not appear applicable. The annual report was prepared by corporate headquarters.

All containers that were examined were acceptable. A roofed, concrete based shed is utilized to accumulate waste.

Memo to Phillip Prater March 15, 1984 Page 2 Re: Champion Building Products Orangeburg, S. C. Generator Inspection

No deficiencies were noted during the inspection. Company officials were again advised to investigate the old plant dump located on their property.

JMB:maj

cc: Chris Julian, Champion Building Products Kin Hill, Lower Savannah District EQC Director



South Carolina Department of Health and Environmental Control

2600 Bull Street Columbia, S.C. 29201

Commissioner Robert S. Jackson, M.D.

Board
Moses H. Clarkson, Jr., Chairman
Leonard W. Douglas, M.D., Vice-Chairman
Barbara P. Nuessie, Secretary
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Oren L. Brady, Jr.
James A. Spruill, Jr.
William H. Hester, M.D.

Lower Savannah District Environmental Quality Control 117 Marion Street, N.E. Aiken, S.C. 29801 (803) 648-9561

June 17, 1986

Mr. Chris Julian U. S. Plywood Corporation P. O. Box 1087 Orangeburg, South Carolina 29115

RE: Generator Inspection
U. S. Plywood Corporation
SCD003342177
Orangeburg County

Dear Mr. Julian:

On May 30, 1986, representatives of this office inspected the above referenced industry for compliance with the generator requirements as specified in the South Carolina Hazardous Waste Management Regulations promulgated pursuant to Section 44-56-10 et seq. of the 1976 South Carolina Code of Laws, as amended.

Inspection participants are listed below:

Chris Julian, representing U. S. Plywood Corporation
Marion Fanning, representing U. S. Plywood Corporation
James Burckhalter, representing S. C. Dept. of Health & Environmental Control

The following deficiencies were noted during the inspection and require immediate correction:

- R.61-79.265.16(c) An annual review of hazardous waste training must be conducted. This was not documented.
- R.61-79.265.52(c) Formal arrangements with local police, fire, hospital, contractors and emergency response teams are required.
- R.61-79.265.53(b) Copies of the contingency plan must be submitted to local authorities.

Information stating compliance with these requirements must be submitted, in writing, to this office by July 17, 1986.

Mr. Chris Julian June 17, 1986 Page 2 Re: Generator Inspection
U. S. Plywood Corporation
SCD003342177 - Orangeburg County

A copy of the checklist used during the inspection is attached.

Your plant's situation is different from most. No one person is responsible for the hazardous waste management program. This fragmentation of records and responsibilities makes the inspection process somewhat more complicated. Due to the interrelationships that exist between various portions of the Hazardous Waste Management Regulations, it would be best if one person coordinated the various efforts.

As was mentioned during the visit, further investigation of the **eld drum site** and cocling water basin by your company would seem prudent. Little concrete information appears to be available concerning the drum site. The possible presence of chromate cleaners in your cooling water basin should be investigated. In past years, the use of chromate cleaners was quite common. Since both sites are adjacent to a small stream, the stream may need investigation regarding possible impact by these sites. These investigations will eventually be conducted by the Department of Health and Environmental Control. If problems are present, there could be advantages to addressing them promptly and not waiting on DHEC to find them.

If you have any questions, please contact me at 648-9561.

Sincerely,

James M. Burckhalter

Solid & Hazardous Waste Consultant

Lower Savannah District

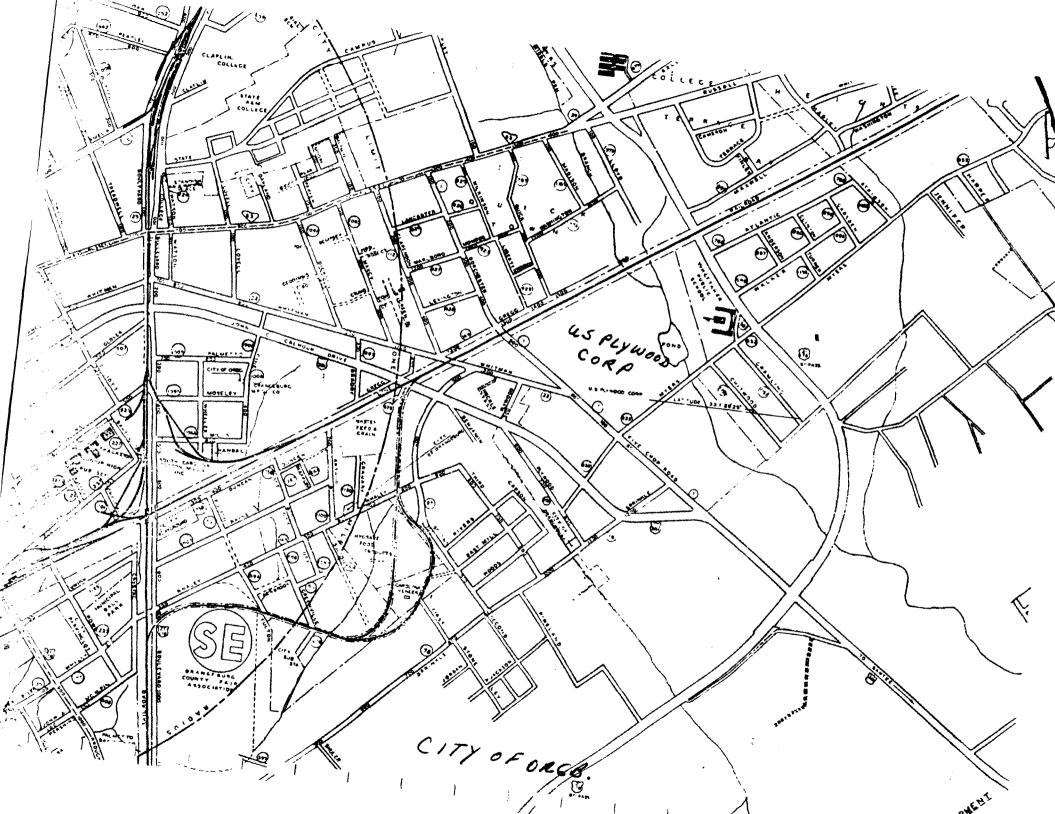
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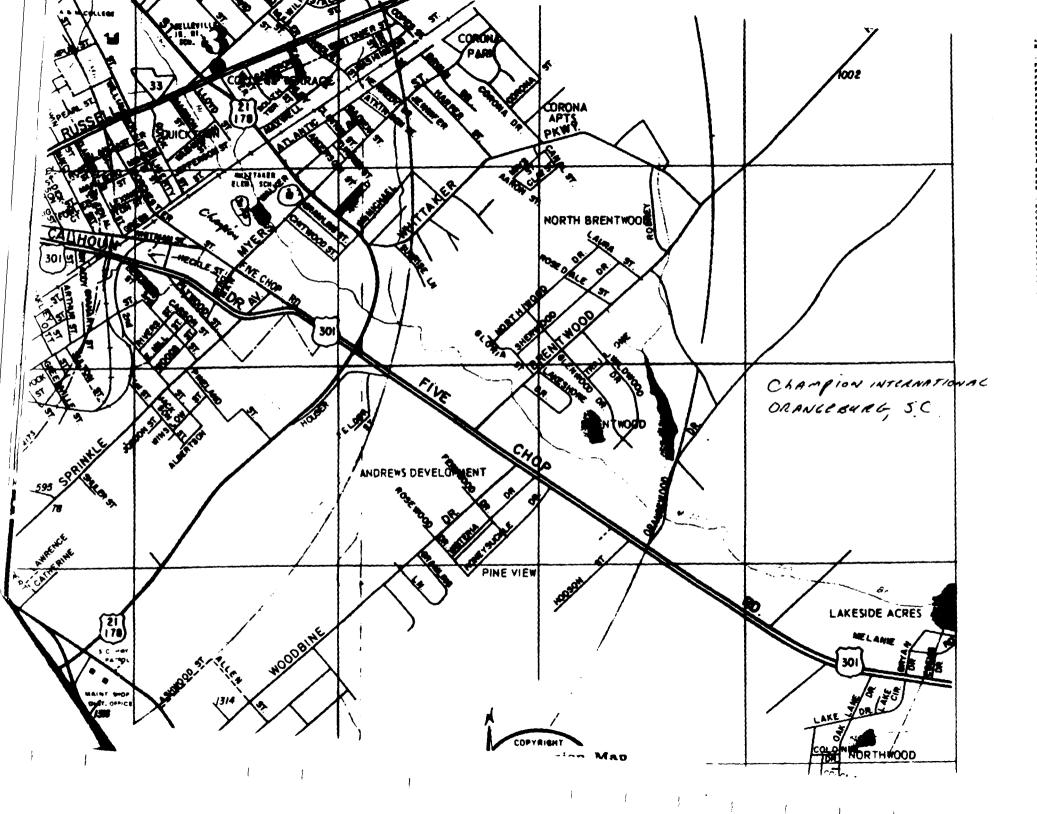
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JMB:maj

enclosure

cc: Phillip Prater, Bureau of Solid & Hazardous Waste, S.C. DHEC Kin Hill, Lower Savannah District EQC Kim Cauthen, Lower Savannah District EQC





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Notification of mazardous Waste Site

United States Environmental Protection Agency Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compen- paper, Indicate the letter of the item sation, and Liability Act of 1980 and must which applies.

Please type or print in ink. If you need additional space, use separate sheets of

	be mailed by June 9, 1981.		, ,				
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	Enter the name and address of the	person A	_{leme} Uzzie Fog	le, Manager, Fin	ishes Develo	oment	
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Form Approved OMB No. 2000-0138

Notification of Hazardous Waste Site		
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and where the weste came from. Provide any other information or comments which		
may Milp describe the site conditions.		
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Signature and Title: The person or authorized representative such as plant managers, superintendents,	usme Richard C. Wigger, Vic	
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Signature and Title: The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required p notify must sign the form and provide a nailing address (if different than address)	Green One Champion Plaza	☐ Owner; Pas

ŞEPA	-	HAZARDOUS WAS			REG	ION SITE	NUMBER	1
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B. INVESTIGATIVE ACTION(S) NEE	DED (II yes, com	plete Section III.)	·	/				
C. REMEDIAL ACTION NEEDED (II	yes, complete Sec	ction (V•)						
ENFORCEMENT ACTION NEEDE D. be primarily managed by the EPA is anticipated.)								
E. RATIONALE FOR DISPOSITION				<u> </u>				
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F. INDICATE THE ESTIMATED DATE (mo., day, & yr.)	TE OF FINAL DIS	POSITION	G. IF A CASE	DEVELOP!				
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H. PREPARER INFORMATION								
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Rulling Grange	-/ G		203-758-5681 10-28-83					
The Property Control of the Control		NVESTIGATIVE A			· _ X		· · · · · ·	
A. IDENTIFY ADDITIONAL INFORM								
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B. PROPOSED INVESTIGATIVE ACT	TIVITY (Detailed)	information)						
•	2.SCHEDULED	3. TO BE						
1. METHOD FOR OBTAINING	DATE OF	PERFORMED BY	4.					
NEEDED ADDITIONAL INFO.	ACTION (mo, day, & yr)	(EPA, Con- tractor, State, etc.)	ESTIMATED MANHOURS			5. REMARK	. 5	
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b. TYPE OF MONITORING				ļ				
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d. TYPE OF LAB ANAL	YSIS			Ţ					
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e. OTHER (specity)	}								
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I. EPA				b. STA	TE				
				1 05	NEW Compation				
C. EPA CONTRACTOR				4. 5 7	HER (specify)				
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			. REMEDIA						
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	2. EST.	. 3. EST.	4.						
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. LONG TERM STRATEG	Y (On Site & Off-S	Site): List all los	ng term solut	ions, e.g	excavation, r	emoval, gro	und water	monitoring wells, etc.	
See instructions for a li	t of Key Words fo	r each of the acti	ons to be us	ed in the	spaces below.				
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S.C. DEPT. OF HEALT REQC - Bureau of District Services 2000 Bull Street Columbia, S.C. 29201

MAY 1 5 1987

S. C. DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL Bureau of Solid & Hazardous Waste Management

TO JOHN CAIN	Date 14 MAY 87
SOLID + HAZ. WASTE	Subject & S Ply WOUD, Formany
	CAmpion INKINATIONAL, FORMA, HORMAN,
	ORANGE BURG, S.C.
- ATTACHED IS A COPY OF A WHAT IS PRIS SITE'S STATUS	meno yourisHT NCED.
LOOKED AT THE OLD DRUM SITE YEARS	·
AN INSPECTION REPORT. I BINK This	_
IVITATED P.A. FORMS. ANY INFORMA	Tion you Have WOULD BE APPRECIATED.
	Im Burchhalten
	Josephalten Dikon EQC



SEPA

POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION SITE NUMBER (to be as-

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). Pile this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

Agency; Site Tracking System; Hase	rdous Waste Enforcemen	nt Task Forc	• (EN-335)	k 401 M St.,	SW; Washi	ington, DC 20460.
			TION			
SCD003342177 ORANG CHAMPIUN INTERNATION				r identifier)		
FIVE CHOP RU ORANGEBURG		9115	E E.	ZIP CODE	F. COUN	TY NAME
FOGLE, OZZIE, MGR/FI		42632			2. TELE	PHONE NUMBER
1. FEDERAL 2. STATE	3 COUNTY 4 M	IUNICIPAL	S PRIV	/ATE	J4K 40 ₩4	
1. SITE DESCRIPTION Hardfil						
"103-C NUTIFICATION" EARL WILLIAMS PHONE: 803-758-5544	DATE: 810	609				K. DATE IDENTIFIED (mo., day, & yr.)
			*		2. TELE	PHONE NUMBER
		- 1)	olete this :	section last)		
A. APPARENT SERIOUSNESS OF PROBL		ONE	S UNKN	IOWN		
B. RECOMMENDATION						
1. NO ACTION NEEDED (no hexard)		2.	TENTAT	E SITE INSPECT	CTION NEE	EOEC t:
3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED F	OR:	1	WILL BE	PEPFORMED	●Y:	
b. WILL BE PERFORMED BY:		4.	SITE INSPI	ECTION NEED	ED (low pr	iority)
C. PREPARER INFORMATION 1. NAME		2.	TELEPHO	NE NUMBER		3. DATE (mo., day, & yr.)
Distilled Branaia	<u>a</u>		80.3-	758-56	81	9-14-82
	J III. SIT	E INFORMA	TION			
A. SITE STATUS 1. ACTIVE (These industrial or municipal sites which are being used for waste treatment, starage, or disposal on a continuing basis, even if infro-quently.)	2. INACTIVE (Those office onlich no longer reconcer)	ceive (Those	OTHER (epo eiten that in lar or contin	iclude such inc	cidenta like alte for w	"midnight dumping" where agte disposel has occurred.)
8. 18 GENERATOR ON SITE?	2. YES (apocily	generator's to	w-digit SIC	Code):		
C. AREA OF SITE (In acres)	D. IF APPARENT SERIO 1. LATITUDE (dege-min.		ITE IS HIGI	A. SPECIFY CO		
E. ARE THERE BUILDINGS ON THE SITE						ı

Continued a form a ront										
IV. CHARACTERIZATION OF SITE ACTIVITY Indicate the major site activity/res) and details relating to each activity by marking "X" in the appropriate boxes.										
Indicate the major si	te activ	ity(ies) and deti	ils	relating to each ac	tiv	vity by marking 'X' is	n ti	e appropriate box	e 3.	
A. TRANSPOR	RTER	×	Θ. :	STORER	C. TREATER		×	D. DISPOSER		
1. RAIL		1. PILE			\perp	1. FILTRATION		VI. LANDI	LANDFILL	
2. SHIP		2 SUNF4	CE	IMPOUNDMENT		2 INCINERATION		2. LANDI	2. LANDFARM	
3. BARGE		3. DRUMS	•			3. VOLUME REDUCT!	0 N	3. OPEN	3. OPEN DUMP	
4. TRUCK		4. TANK	4 8	OVE GROUND	Ţ,	4. RECYCLING/RECO	VE	RY 4. SURFACE IMPO		IMPOUNDMENT
S. PIPELINE		S. TANK.	BE	LOW GROUND		S. CHEM./PHYS. TRE	AT	MENT S. MIONIC	нт	DUMPING
6. OTHER (specify)	:	6. OTHE	÷ (5	pecify):	1	S. BIOLOGICAL TREA	1 TN	ENT & INCINE	RA	TION
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	E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED									
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DAD-49elling		the state of the s		V WASTE DELATI	<u> </u>	INFORMATION	-4-	 		
A. WASTE TYPE			-	V. HASIE RELATI		THE OWNER THAT				· · · · · · · · · · · · · · · · · · ·
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B. WASTE CHARACTE	RISTICS									
₩ 1 UNKNOWN] 2. COF	RROSIVE 🔲 3	. 16	NITABLE []4 R	ΑD	HOACTIVES H	IGH	LY VOLATILE		
₩ toxic]7 REA	ACTIVE6	1N	ERT []9 F	LA	MMABLE				
·										
10. OTHER (specif	(y):									
C. WASTE CATEGORIE							_			
1. Are records of was	es avail	able? Specify ite	ms	such as manifests, in	ver	ntories, etc. below.				
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a. SLUDGE	AMOUN	b. OIL	•	c. SOLVENTS	Ļ.	d. CHEMICALS	 	e. SOLIDS	+.	1. OTHER
AMOUN!	1~~~	1	^~	2	<u> </u> ^^	ACCA !	 ^^	10011	^	7)
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PIGMENTS	<u> </u>		\Box	SOLVENTS	L.		L		4	
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SLUDGES	ł			SOLVENTS	1	LIQUORS	L		\bot	
(3) POTW	1	·		(3) OTHER(apecify:		131 CAUSTICS		(3) MILLING/	-	(3) RADIOACTIVE
	1		_		L		<u> </u>	MINE TAILINGS	4	1
(4) A LUMINUM	1				ł			FERROUS (4) SMLTG, WASTE	1	(41 MUNICIPAL
SLUDGE	1	1			Ì	(4) PESTICIDES	1	141 SMLTG. WASTE	5	TAI WORKET PAC
(5) OTHER(specify):						(5) D Y E\$/IN KS		'S' SMLTG. WASTE	s	(8) OTHER (specify):
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3. LIST SUBSTANCES OF GREATES	V. WA	WHICH MAY	ED INFORMATI	ON (continued) (place in descending	g order of hezard).						
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A ADDITIONAL COMMENTS OF NAME		CONTRACTOR OF	2 61711471011 211								
4. ADDITIONAL COMMENTS OR NAT											
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Yelante had lier	ال المحمد	o Quan	semma Com	rti Yandi	Ill which in some						
Prefixed wash solvents your manufacturing of parel Waste had been to Orangelung Country Mandfill which is permitte VI. HAZARD DESCRIPTION											
	T										
A. TYPE OF HAZARD	POTEN- TIAL HAZARD	ALLEGED INCIDENT	D. DATE OF	}	E.REMARKS						
	(mark 'X')	(mark 'X')	(mo.,day,yr.)	İ							
1. NO HAZARD	X	10 Feb 20		- y 354 · ·	***						
	/				<u> </u>						
2. HUMAN HEALTH											
, NON-WORKER				 							
1 INJURY/EXPOSURE			Ì								
											
4. WORKER INJURY	L										
_ CONTAMINATION				1							
E. OF WATER SUPPLY		ł									
_ CONTAMINATION											
OF FOOD CHAIN											
CONTAMINATION											
7. CONTAMINATION OF GROUND WATER	}	1		1							
CONTAMINATION		 		†							
G. CONTAMINATION OF SURFACE WATER		1	İ	į							
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9. PLORA/FAUNA											
		 									
10. FISH KILL	Ì]		1							
CONTANUATION		 									
11. CONTAMINATION OF AIR	ł	[į							
		 									
12. NOTICEABLE ODORS											
	 	 		 							
13. CONTAMINATION OF SOIL											
	 	 		 							
14. PROPERTY DAMAGE	}	}									
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IS. FIRE OR EXPLOSION											
		 		 							
14. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS											
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17. SEWER, STORM DRAIN PROSLEMS]									
		 		 							
18. EROSION PROBLEMS	ļ			1							
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19. INADEQUATE SECURITY											
		 		 							
20. INCOMPATIBLE WASTES		1									
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21. MIDNIGHT DUMPING		ì		1							

Continued From Front			
	,	II. PERMIT INFO	DRMATION
A. INDICATE ALL APPLICABLE			
1 NPDES PERMIT 2	SPCC PLAN	3. STATE PERMIT	(specify)
4 AIR PERMITS 5	LOCAL PERMIT	6. RCRA TRANSPO	PRTER
7 RCRA STORER 3	RCRA TREATER	9 RCRA DISPOSE	R
		Chan	npion International Corp. is an
10. OTHER (specify):		<u>late</u>	rim Status Facility.
B. IN COMPLIANCE?			
1. YES 2	NO I	3 NNKHOMN	
4 WITH RESPECT TO (Hat r			
		PAST REGULATO	RY ACTIONS
A. NONE	. YES (summarize below)	
	1V 11455	71011 16711171	
	IA. INSPEC	TION ACTIVITY	(past or on-going)
TA NONE Z B.	YES (complete items 1,2	?,3, & 4 below)	
I. TYPE OF ACTIVITY	2 DATE OF PAST ACTION	3 PERFORMED BY:	4. DESCRIPTION
	(mo., day, & yr.)	(EPA/State)	
	1,		
103paction	Monthly	State	crangebing County Landfill
	· ·		
			inspected monthly.
		j	·
	X. REM	EDIAL ACTIVITY	(past or on-going)
A. NONE B.	YES (complete items 1,		
I. TYPE OF ACTIVITY	2. DATE OF PAST ACTION	3. PERFORMED BY:	4. DESCRIPTION
	(mo., day, & yr.)	(EPA/State)	
	_ 1	l	<u> </u>

EPA Form T2070-2 (10-79)

information on the first page of this form.

PAGE 4 OF 4

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II)

Circumatill

South Carolina Department of Health and Environmental Control

2600 Bull Street Columbia, S.C. 29201

Commissioner
Robert S. Jackson, M.D.



Board

Moses H. Clarkson, Jr., Chairman Leonard W. Douglas, M.D., Vice-Chairman Barbara P. Nuessle, Secretary Gerald A. Kaynard Oren L. Brady, Jr. James A. Spruill, Jr.

October 31, 1983

Mr. Kurt J. Penny Champion International Corporation Route 1, Box 97A-1 Swansea, SC 29160

Reference No. 6

RE: Champion International Disposal Request Orangeburg County

Dear Mr. Penny:

This office hereby grants approval for disposal of your empty triple rinsed herbicide, pesticide, fungicide, insecticide containers, and your 1.5 milligram plastic sheets on a continuing basis at the Orangeburg County Landfill. Approval is contingent upon the following conditions:

- 1) Prior approval be obtained from the appropriate landfill officials.
- 2) Precautions must be taken to prevent leakage or spillage during transport.
- 3) Disposal is limited to the wastes and amounts described in your October 13, 1983 correspondence.
- 4) The material be covered upon disposal with a suitable soil cover or with refuse which receives daily soil cover.
- 5) Coordinate the disposal with the district solid waste consultants, James Burckhalter (648-9561) and Ed McDowell (758-4415).
- 6) Any adverse effects to the receiving landfill will nullify this approval.

If you have any further questions concerning this matter, please do not hesitate to contact this office.

Sincerely,

J. Rick Grant

Je Man

Waste Engineering Section Bureau of Solid and Hazardous

Waste Management

JRG:als

cc: Landfill Official

James Burckhalter, Lower Savannah

Ed McDowell, Central Midlands

Timber ands Dry's un



RECEIVED

OCT 14 1983

S. C. DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL Bureau of Solid & Hazardous Waste Management

October 13, 1983

Mr. Joseph R. Grant Waste Identification & Evaluation Dept. Health & Environmental Control 2600 Bull Street Columbia, SC 29201

Mr. Grant:

On May 24, 1982 I requested a letter of approval for disposal of chemicals and chemical containers in the Orangeburg Co. landfill. On October 26, I requested approval for disposal of additional chemical containers. The lists of chemicals and chemical containers in the above letters are to be considered current usage lists. Being that the letters of approval were issued in 1982, I would like to know if they are still in effect.

I would also like to amend the above lists with more chemical containers, upon approval. The additional containers are as follows:

Oust herbicide jugs (1 gal. size)
Poast herbicide jugs (1 gal. size)
Fusilade herbicide jugs (1 gal. size)
Bravo herbicide jugs (2 gal. size)
Blazer herbicide jugs (1 gal. size)
Benlate fungicide bags (2 lb. size)
Manzate fungicide bags (3 lb. size)
Lorsban insecticide can (5 gal. size)

Once again, all plastic, glass, and metal containers have been triple rinsed.

Another item I would like to dispose of at the Orangeburg County landfill is a total of approximately 960,000 sq. ft. of 1.5 mil plastic. This plastic is used as a ground cover in conjunction with the injection of methyl bromide into the soil. Since this plastic comes in direct contact with methyl bromide vapors, are we required to have prior approval before disposal of the plastic? If approval is necessary, then I request the plastic be added to the above list for approval. If you have any questions, please contact me at 568-2436 or the above address.

Thank you,

Kurt J. Penney

KJP:1m

March 8, 1983

Mr. Kurt Penny Champion International Corp. Rt. 1, Box 97 A-1 Swansea. SC 29160

RE: Solid Waste Disposal of Empty Cans into Orangeburg County Landfill

Dear Mr. Penny:

This office hereby grants approval for disposal of your empty Herbicide, Insecticide, Fungicide and Miticide containers as detailed in your March 4, 1983 letter at the Orangeburg County Landfill. Approval is contingent upon the following conditions:

- 1. All containers meet DHEC definition of empty.
- 2. Prigr approval be obtained from the appropriate landfill officials.
- 3. Précautions must be taken to prevent leakage or spillage during transport.
- 4. Disposal is limited to the wastes and amounts described in your March 4, 1983 correspondence.
- The material be covered upon disposal with a suitable soil cover or with refuse which receives a daily soil cover.
- 6. Coordinate the disposal with the district solid waste consultant, James Burckhalter (telephone 648-9561).
 - 7. Any adverse effects to the receiving landfill will nullify this approval.

If you have any further questions concerning this matter, please do not hesitate to contact this office.

Sincerely,

Joseph R. Grant Waste Identification & Evaluation Bureau of Solid & Hazardous Waste Management

JRG:bes

CC: James Burckhalter Ed McDowell

5 war sea (Douth Darrigha 2916) 803 568-2436



October 26, 1982

Mr. Rick Grant
Dept. Health & Environmental Control
2600 Bull Street
Columbia, S. C. 29201

Dear Mr. Grant:

On May 24, 1982 I submitted a request of approval for disposal of empty pesticide containers. This letter was approved via your letter of June 28, 1982. We are now using other chemicals as well and I submit the following list for approval for disposal of the empty pesticide containers at the Orangeburg County landfill. The plastic, glass, and metal containers have been triple rinsed. The containers are:

Tomber and Liv

Modown herbicide drum (30 gal. size) Modown herbicide bags (10 lb. size) Sutan herbicide can (5 gal. size) Revenge herbicide bag (30 lb. size) Kelthane miticide jars (1 gal. size)

In addition to the containers, I would like approval to dispose of 2-170 g. bags of Devrinol herbicide.

Thank you,

Kurt J. Penney

Nursery Technician

KJP/lm



May 24, 1982

Mr. Rick Grant
Dept. Health & Environmental Control
2600 Bull Street
Columbia, S. C. 29201

Mr. Grant:

I would like to request a letter of approval for disposal of chemicals and chemical containers in the Orangeburg County Landfill. These chemicals are used throughout the summer and fall. If possible, I would like for this letter to be effective thru October 1982. The plastic and metal containers have been triple rinsed and the chemicals are in sealed 55 gal. drums. A list of the chemicals and containers follows:

Chemicals:

1-55 gal. drum Furadan/clay slurry 1-55 gal. drum w/25 gal. Arasan 42-S

Containers:

Furadan insecticide jugs (1 gal. size) Goal herbicide jugs (1 gal. size) Roundup herbicide jugs (1 gal. size) Aatrex herbicide jugs (2½ gal. size) Ridomil fungicide jugs (1 gal. size) Basagran herbicide jugs (1 gal. size) Bayleton fungicide bags Captan fungicide bags

Sincerely,

Kurt J. Penney Nursery Technician

KJP/lm



May 24, 1982

Mr. Rick Grant
Dept. Health & Environmental Control
2600 Bull Street
Columbia, S. C. 29201

Mr. Grant:

I would like to request a letter of approval for disposal of chemicals and chemical containers in the Orangeburg County Landfill. These chemicals are used throughout the summer and fall. If possible, I would like for this letter to be effective thru October 1982. The plastic and metal containers have been triple rinsed and the chemicals are in sealed 55 gal. drums. A list of the chemicals and containers follows:

Timber and a Division

Chemicals:

1-55 gal. drum Furadan/clay slurry (not disposed of)

1-55 gal. drum w/25 gal. Arasan 42-S (not disposed of)

Containers:

Goal herbicide jugs (1 gal. size)
Roundup herbicide jugs (1 gal. size)
Aatrex herbicide jugs (2½ gal. size)
Ridomil fungicide jugs (1 gal. size)
Basagran herbicide jugs (1 gal. size)
Bayleton fungicide bags
Captan fungicide bags

Sincerely,

Kurt J. Penney Nursery Technician

KJP/lm

RECEIVED

MAY 25 1932

with QUALITY 30 to OL Burcau of Commons Route 1 Box 37 A 1 Swansea, South Carbina 29160 803 568-2436



MAR 7 1983

S. C. DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL Bureau of Solid & Hazardous Waste Management



March 4, 1983

Mr. Rick Grant Dept. Health & Environmental Control 2600 Bull Street Columbia, SC 29201

Dear Mr. Grant:

I would like to request a letter of approval for disposal of chemical containers in the Orangeburg County Landfill. We will plan periodic disposal trips consisting of no more than thirty (30) chemical containers per trip. The majority (85%) of these containers will be either the 1 gal. size jug or the 5 lb. bag size. All glass, plastic, and metal containers will be triple rinsed.

A list of the chemicals follows:

- A) Herbicides
 - 1) Goal 2E
 - 2) Roundup
 - 3) Aatrex 4L
 - 4) Basagran
 - 5) Sutan
 - 6) Velpar
 - 7) Treflan
 - 8) Modown WP
 - 9) Vernam 7E

- B) Insecticides
 - 1) Dursban Granular
 - 2) Furadan 4F
 - 3) Cygon 2E
 - 4) Diasinon 4E
- C) Fungicide
 - 1) Ridomil 2E
 - 2) Bayleton WP
 - 3) Captan 50 WP
 - 4) Benlate
 - Manzate D
- D) Miticide
 - Kelthane EC

Thank you,

Kurt J. Penney

Nursery Technician

KJP:1m

Reference No. 7



AUG 31 1981

S. C. DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL Bureau of Solid & Hazardous Waste Management

C 1AOB

William M. Wilson, Chairman Lorin Mason, Jr., M.D., Vice-Chairman I. DeQuincey Newman, Secretary Leonard W. Douglas, M.D. George G. Graham, D.D.S. Michael W. Mims Barbara P. Nuessle

> COMMISSIONER Robert S. Jackson, M.D. 2600 Bull Street Columbia, S. C. 29201

August 27, 1981

Mr. Ozzie Fogle Champion Building Products P. O. Box 1087 Orangeburg, South Carolina 29115

Dear Mr. Fogle:

There are problems concerning disposal of your company's wastes at the Orangeburg County Landfill. Our district records indicate that your company has DHEC approval for 50 drums per month of cured urea glue sludge to be disposed of at the Orangeburg County Landfill.

The approval letter states that transport is to be in a manner to prevent spillage or leakage. The approval letter further states that the glue sludge must be disposed of in sealed drums.

The drum pit at the landfill has been a matter of concern for some time. On numerous occasions I have talked with county officials regarding proper control of wastes entering the pit. The situation has not improved.

Your personnel are dumping drums in the pit. Many drums are not sealed. Some do not even have lids. Other drums open when they fall into the pit. The result is waste leaking from drums in the pit and even on the ground around the pit. On one occasion, a white milky liquid, which I was told came from your plant, was in the pit.

On Thursday, August 20, 1981, David Hughes of DHEC observed a Champion Building Products truck enter the landfill with open drums. Liquid in the drums was sloshing out and leaking during transport. The material, described as a brown oily liquid, was dumped into the drum pit. Except on very rare occasions, liquids are not approved for disposal at landfills.

It is my recommendation that the county stop utilizing the drum pit. A better approach would be a trench. Your trucks could then back down to the end of the trench. The drums could then be <u>unloaded</u>, not <u>dropped</u>, from the truck and placed in an orderly arrangement for the county to cover. This would end the spillage problem. Drums, of course, must be sealed.

Mr. Ozzie Fogle August 27, 1981 Page 2

I would suggest that you investigate the brown oily liquid observed by David Hughes on August 20, 1981. If the material does not have DHEC approval for disposal, it would be a violation of our regulations. If the material proved to meet our criteria to identify hazardous waste, it would be a serious violation.

Under our present system of approving non-hazardous industrial wastes for disposal at county landfills, DHEC exercises a large measure of trust in the expertise and integrity of the industrial community. If this trust were damaged through poor management of wastes or willful violation, it would be in the best interests of DHEC and the industrial community to make certain that it did not recur.

While I feel certain it will not be necessary, we could require scheduled disposal under DHEC supervision with samples being taken to identify the waste. It is also possible that approval for local disposal could be disallowed.

I think you can realize that it is in both our interests to properly manage these wastes. I can be reached for assistance at 648-9561 in Aiken at work, or 259-7520 at home.

Sincerely yours,

James M. Burckhalter

Environmental Quality Manager

Lower Savannah District

JMB:maj

cc: Ted Buchanan, Enforcement
Jim Ullery, Solid Waste
Jack Kendall, Solid Waste
George P. Nelson, Jr., Lower Savannah
Gary Smoak, Orangeburg County Administrator
Fulton Livingston, Orangeburg County Solid Waste Mgr.



Lichlan L. Hyatt, Chairman M. Wilson, Vice-Chairman Jincey Newman, Secretary W. A. Barnette, Jr. Caroline G. Newhall C. M. Shiver, Jr. J. Howard Stokes. M.D.

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

E. KENNETH AYCOCK, M.D., M.P.H., COMMISSIONER
J. MARION SIMS BUILDING—2600 BULL STREET
COLUMBIA, SOUTH CAROLINA 29201

September 17, 1974

MEMORANDUM

TO: Charles M. Kelly, Lanager

Industrial Waste Section/

FROM: kandall E. French

Industrial Solid Waste Consultant

RE: Inspection of closed dump

U.S. Plywood Corporation

Orangeburg County

On September 13, 1974, Capers Dixon and I contacted Mr. Larry Evans, Plant Manager of U.S. Plywood, to observe what progress had been made in cleaning up the plant's old dump site. We observed several piles of wood wastes and a few 55-gallon drums. Mr. Evans stated that the clean up should be completed by the end of the year. Veyetation has almost taken over the entire area. All plant wastes are now being taken to the County Landfill, and the present condition of this old dump site does not pose any threat of environmental pollution.

REF : dah

cc: Capers Dixon

BOARD William M. Wilson, Chairman J. Lorin Mason, Jr., M.D., Vice-Chairman Leonard W. Douglas, M.D., Secretary Oren L. Brady, Jr. Moses H. Clarkson, Jr. Gerald A. Kaynard Barbara P. Nuessie

> COMMISSIONER Robert S. Jackson, M.D. 2600 Bull Street Columbia, S.C. 29201

MEMORANDUM

DATE:

June 21, 1982

TO:

Ed Gibson

Solid & Hazardous Waste

FROM:

James M. Burckhalter Jms Burckhalter Lower Savannah District EQC

SUBJECT:

Champion International, Orangeburg County, formerly U. S. Plywood Corp.,

Interim status inspection, SCD 003 342 177

On June 16, 1982, George Nelson and the writer visited the referenced plant.

The plant is probably only a generator of hazardous waste. Central office records should already show them as only a generator, according to correspondence which is attached. Some of this correspondence was supplied by Champion.

Waste streams generated include solvent "finish" waste, solvent adhesive waste, waste oil and cured urea-formaldehyde glue waste.

Several hazardous waste facilities have been utilized. These include SCSCA Services, ABCO, and M & J Solvents in Georgia. Manifests for both South Carolina and Georgia appeared to be in order. Waste oil is collected by Harold Mason. Mr. Mason's permit status is unknown.

Champion's storage area consisted of a concrete pad and metal roof. Drums were labeled and had the necessary information. Champion does not store over ninety days. Labels supported this. Drums seemed in good condition.

The plant's contingency plan was difficult to assess. A one-page sheet listing phone numbers for plant personnel to handle emergencies during the day and night was available. This sheet is supplied to all plant personnel. It was suggested that the DHEC 24-hour number be added. A contingency plan covering all materials utilized at the plant was not available at the time of my visit. It had been sent to Ted Groszkiewicz (513-868-6660) at their Hamilton, Ohio, corporate headquarters for review. The plan had not yet been returned.

Record keeping practices seemed acceptable. Manifests, quarterly reports and other records were readily available.

The plant has three Air permits: 0/P-38-135, 0/P-38-136 and 0/P-38-151.

Memo to Ed Gibson June 21, 1982 Page 2 Re: Chamption International (formerly U. S. Plywood Corp.) Orangeburg County

This writer is not aware of past regulatory action regarding solid or hazardous waste.

Several problems were noted which will have to be addressed. Champion has an on-going approval for fifty (50) drums per month of cured ureaformaldehyde glue sludge to be disposed of at the Orangeburg County Landfill. Since this writer had not observed the material at the landfill in several months, the question was raised as to how the material was being handled. The cured urea-formaldehyde glue sludge is being burned in their wood/fuel fired boilers. District Air personnel were not aware of this practice.

Fly ash from the wood fired boilers is currently dumped on plant property. Champion was instructed to obtain approval for landfilling or have the disposal area permitted.

Correspondence dated September 17, 1974, in the district files stated that Randall French and Capers Dixon investigated to determine if the plant's old dump site had been closed. Based on this information, the closed site was visited.

The old dump site is directly behind the plant. The area is very overgrown. Several old drums were sitting among the overgrowth. Several drums contained solids of unknown composition.

Ozzie Fogle, Plant Manager, stated that an attempt was made several years ago to obtain information as to what had been disposed of at the old dump. Mr. Fogle stated that older employees remembered that 35-40 drums of filler paste material were buried at the site. It was stated that this information was submitted on a "federal report" at the time of the investigation.

Mr. Fogle was informed to investigate the site further and definitely determine what was in the drums which were visible. Middle Pen Branch is directly behind the site and might possibly indicate any problems if carefully investigated.

Assuming the sludge burning and fly ash do not involve hazardous wastes, the plant is probably in compliance regarding hazardous waste generation. The ash disposal, sludge incineration and the old dump will require further investigation.

JMB:maj

Attachments

RECEIVED

OCT 1 3 1980

ENVIRONMENTAL AFFAIRS SOLID WOOD-EAST

BOARD

William M. Wilson, Chairman

J. Lorin Mason, Jr., M. D., Vice-Chairman

Newman, Secretary 1 DeQuincey Newman, Secretary Leonard W. Douglas, M.D. George G. Graham, D.D.S. Michael W. Mims Barbara P Nuessle

> COMMISSIONER Robert S. Jackson, M.D. 2600 Bull Street Columbia, S. C. 29201

Orangeburg, South Carolina

Dear Sirs:

This office has received your application for a permit under R.61-79, of the South Carolina Hazardous Waste Management Regulations. Your application is currently being evaluated. When staff has finished its review you will be notified in writing as to the tentative decision reached by the Department as required by Section (F) of R.ol-79.10, Treatment, Storage, and Disposal Facility Permits. As specified in the hazardous waste regulations, and the State Hazardous Waste Management Act, facility owner/operators who have:

- (1) provided timely notification as required in R.61-79.2, Notification of Hazardous Waste Activity, and
- (2) filed a pennit application as required by Section (C) and/or (D) of R.61-79.10, Treatment, Storage, and Disposal Facility Permits;

have authorization to continue operation of a hazardous waste management facility under R.61-79.10B of the Hazardous Waste Management Regulations and 44-56-60 of the 1976 South Carolina Code of Laws (as amended) provided they comply with the following

- (1) R.61-79.3 dealing with manifests, recordkeeping, and reporting;
- (2) R.61-79.4 dealing with spills; and
- R.61-79.5 dealing with financial responsibility.

During the period while your application is being evaluated, personnel from this Division may perform routine inspections to determine compliance with the above.

Thank you for your cooperation in this matter. If you have any questions, please feel free to call.

Sincerely,

My doll of the rack

Hartsill W. Truesdale, P.E., Director Solid and Hazardous Waste Management Division

INT: CM: dhs

CC Ed Clem Fraklijden

CERTIFIED MAIL

Chempion

Criampion International Corporation

Mr. Hartsill W. Truesdale, P.E., Director Solid and Hazardous Waste Management Division 2600 Bull Street Columbia, South Carolina 29201

January 8, 1981

South Carolina Hazardous Waste Permit Application

Dear Mr. Truesdale:

On September 26, 1980, a completed Hazardous Waste Facility Permit application was submitted to the State of South Carolina for our Champion Building Products' Orangeburg, South Carolina facility. At that time the facility was designated as a generator engaged in the treatment, storage, and disposal of hazardous waste.

After further review of the amount of hazardous waste generated at this facility and the methods of disposal used, it was determined that all hazardous waste would be removed from the plant site within the 90 day period as referenced in the State and Federal Hazardous Waste Regulations governing generators of hazardous waste. November 12, 1980, a second notification was filed with the EPA designating this facility as a generator of hazardous waste.

We received a letter from your office on October 13, 1980, stating that our application had been received and was being evaluated. At this time we would like to request that the present state application be amended to show the status of the facility as that of a hazardous waste generator only.

Sincerely,

im Thompson, Assistant Manager

Eastern Environmental Affairs

Solid Wood Products

ШQ

Larry Fields cc: Chris Julian -Fred Rigden

MEMO-letter

S.C. DEPT. OF HEALTH & ENVIRONMENTAL CONTROL EQC - Bureau of District Services 2000 Bull Street

2600 Bull Street

Columbia, S.C. 29201

MAY 1 5 1987

S. C. DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL Bureau of Solid & Hazardous Waste Management

TO JOHN CAIN	Date 14 MAY 87
SOLID + HAZ. WASTE	Subject & S Ply MOUD, Formerly
	Champion INTERNATIONAL, FORM.
	usplywood.
-	ORANU BURG, S.C.
- ATTACKED IS A COPY OF	FAMENO YOUMISHT NEED.
What is Tris sire's STA	TUS? They ARE ON MY LIST. I
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AN INSPECTION REPORT. ITINK	_
	RUBTION YOU HAVE WOULD BE APPRECIATE
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	Jin Burckhalten Di Kan EQC

MEMO-letter

S.C. DEPT. OF HEALTH & ENVIRONMENTAL CONTROL EQC - Bureau of District Services 2000 Buil Street Columbia, S.C. 20201

TO USPLYWOOD Furcaly Champion Tore	NATIONAL Date 14 MAY, 1987
ORANGEBURG, JC	Subject
- MR. DREW Hodges OF GA-PAC	iFic (404-521-4812) PhoNED.
MR HOJUS STATED TAT GA-PACIFIC	
ACQUIRING The ABOVE PLANT. HE NO	
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PROBLEMS WITH MAJ SOLVENTS. J	
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~	CONTINUED

MEMO-letter

S.C. DEPT. OF HEALTH & ENVIRONMENTAL CONTROL EQC - Bureau of District Services 2000 Bull Street Columbia, S.C. 29201

OUS Ply WOOD FICE	Date 14mm/87
PAGE TWO	Subject
- WAAT IS NOW The CENC	CA CIST? HEWAS NOT AWARE OF PRIS.
	CAIN FOR MORE INFORMATION.
	JM Buckhalter
	Airen EQC

Champion International Corporation

Knightsbridge Hamilton, Ohio 45020

October 1, 1980

South Carolina Department of Health and Environmental Control Solid and Hazardous Waste Management Division 2600 Bull Street Columbia, South Carolina 29201

Re: South Carolina Hazardous Waste Regulation, Permit Application

Gentlemen:

On Monday, September 29, 1980, our Orangeburg, South Carolina plant forwarded to your office three copies of their Hazardous Waste Facility Permit Application along with the necessary map and a copy of the EPA Notification of Hazardous Waste Activity form.

At the time of the mailing, the original copy was mistakenly mailed to our Hamilton, Ohio office. We are returning the original copy for your files and apologize for any inconvenience this may have caused.

Mim Thompson, Assistant Manager Eastern Environmental Affairs

Solid Wood Products

incerely,

mg

Enc. 2

CCT 8 1830

S. C. D. F. C. THI AND
ENVIROYMENT CONTROL
SULID WASTE

MANAGEMENT DIVISION

CO BULL STREET, COLUMBIA, SC 29201

cone: (803) 753-5681

HAZARDOUS WASTE FACILITY PERMIT APPLICATION

Champion Building	Products Ozzi	e Fogle I	ndustrial	Finishing	Lab Mgr. (80	3) 354-2632
. Facility Name	Facilit	y Contact		Title		Phone
Five Chop Road		Orang		sc	29115	Orangeburg
. Facility Address	Street Numper		City	State	Zip Cod	
P.O. Box 1087		Orai	ngeburg	SC	29115	Orangeburg
. Facility Mailing Address	Street Number		City	State	Zip Cod	 County
Fred W. Rigden	Ozzie	Fogle In	ndustrial	Finishing	Lab Mgr. (80	3) 534-2632
. Operator's Name	Operato	r's Contact		Title		Phone
Five Chop Road		Oran	ngeburg	sc	29115	Orangeburg
Operator's Address	Street Number	(City	State	Zip Coa	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
P.O. Box 1087		Oras	ngeburg	SC	29115	0
Operator's Mailing Address	Street Number		City	State	Zip Cod	
Champion Internation of State	Ional Corp. Ro Owner's		Mgr. En	vironmental Title CT	Affairs (31 0692	
. Owner's Address	Street Number		Ity	State	Zip Cod	
	·			***************************************	2.,	
1 Landmark Square			ford	CT	0692	
. Owner's Mailing Address	Street Number	•	ity	State	Zip Cod	County
 Type of Permit(s) Being App 	lied For		11. St	atus of Applic	ant	
Treatment (specify)				X Corporation	<pre>Partnership</pre>	7roprietorship
Oisposal (specify)				Government	Not-for P	rofit Corporation
Storage Temporary	Experimental [Emergency		Other (speci	fy)	
- Other (specify)		·				•
' Site Status			13. Fa	cility Status		
🐧 Owned 📗 To Be Le.	ased forYea	rs**	[[2	Existing Ope	ration [Proposed Operation
To Be Purchased*	Rented or to	be Rentedat) (To Se Modifi	•d 🔲	Under Construction
Presently Leased, Lease	Expires**			Other (speci	fy)	
* Enclose Copy of Options Enclose Copy of Rent						
Zoning						
a. What is the present zon	ing of the site?	None	-		 	
b. Is zoning compatible wi	th the intended us	e of the site	7 Yes			
c. If a zoning change is no	eeded, what should	new zoning b	•7 <u>N/A</u>			

H_ 1989 (5/80)

5. Existing Environmental Permits	Type of Par	mit and Issuing Body	Permit No.	Date of Issue	Date of Expiration
Yes	Air	. State	0/P-38-151	07/06/76	07/06/
6. Facility Description					
Provide a topographic map of the map should show the locations of and man-made characteristics of more than 200 feet (61 meters) and	all wells, springled the boundaries.	ngs, and surface water The scale of the map	bodies in the ar	rea and describe nch (2.54 cm.) ec	the onysica
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. ON THE SHEET PROVIDED List: Each sludge containing chromium); the the waste at the facility (e.g. o year (e.g. 30 tons); and the test the provided sheet may be made an	hazardous charadisposal); the quantities to be used	cteristics for each wa wantity of each waste d in handling each was	ste (e.g. toxic); estimated to be i	the action to the	e taken wit , in tons pe
. Certification					
I hereby cartify (or declare) the knowledge.	et all data subm	itted in conjunction w	ith this Applicat	tion are true to	the best of
Date completed Application was ma	ailed or deliver	ed to the Department	912980) 	
Operator's Signature	n(d)	and-	morren day yer	<u>-</u>	
Owner's Signature Hon S	9. The	llez	·	_	
Designing Engineer's Signature	·			Registration	No
R DEPARTMENT USE ONLY					
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OCT 8 1980					
O. DERY, OF HEALTH AND IVIRONMENTAL CONTROL SOUND WASTE		,•			
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entative Decision

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Final Decision

Hazardous waste Macerials Description	dazardous† Characteristics		Annual Quantity Handled Amount ons/Yr	Hazardous Waste Handling Technique		
Acrylic Topcoat Filler Paste	Ignitable (IX E DOO1)	S	6.0	SCA Services		
Prefinish Wash Solvent	Ignitable & Toxic	S	48.0	M & J Solvent Co.		
Vinyl Wash Line Solvent	Ignitable & Toxic	s	20.7	M & J Solvent Co.		
Oil & Grease	Ignitable	S	1.0	Harold Mason Oil Reclaim		
Glue Pit Sludge & Water Base Paint	-	s	157	County Landfill		
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^{***}For each hazardous wasta listed give the hazardous wasta characteristic(s) which identifies the wasta as hazardous. These characteristics are ignitable, Corrosive, Reactive, Toxic, and Listed. Refer to 3.61-79.1 of the Hazardous Wasta Management Regulations for more detail.

 $[\]_$ **Use the code which best indicates the action intended to be taken with the waste. S - Store T - Treat 0 - Dispose



LEVEL

NOTESOOK NO. 315

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BI IK REQUIREMENTS SE_-JANUARY 6, 1988 NGUAGE SHOULD BE FACTUAL fr - it cover of the Logbook: lite Name, Site Location, Project ar made using ink. stement referencing Equipment Эg. C Work Plan, Study Plan, and Cussion and distribution to we team member signatures. * ate each page. Project Manager v and sign off on each logbook e_drawn through error. Each s dated/initialed. eather conditions. Provide to cription and remarks. I changes from project ocuments. te *betch with sample locations. l calibration and pre-ci-cks of equipment. Ĭ erence to Sampling Field Sheets stimpling information. the blog by completing the formation at the end of the Lawrence P. E. Otwell Senior Environmental Engineer rei asentative is on hand to rei pt for samples an entry to nu be placed in the logbook. Wood Products Manufacturing Division (Eastern Area) Res: (404) 461-6781 nı 133 Peachtree St. N.E. (30303) Georgia Pacific Corporation P.O. Box 105603 Atlanta, GA 30348 (404) 521-5081

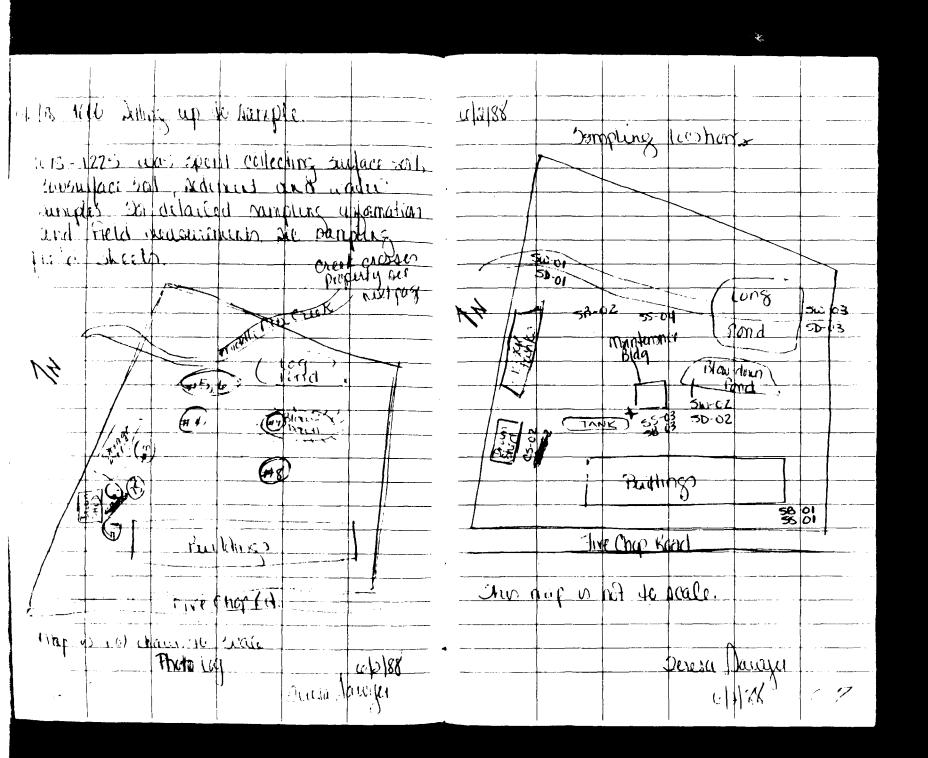
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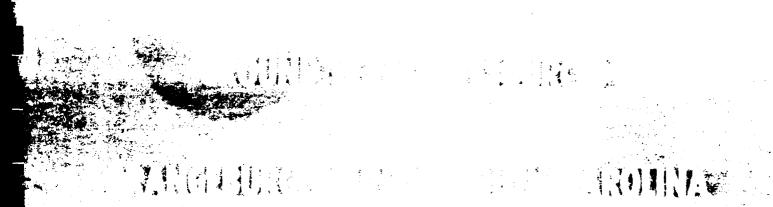


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- Reference No. 13

ב אואאועונס	TELECON NOTE		
DATE: August 30, 1988	TIME: 1010		
OF: City Hall-Orangeburg	PHONE: (803) 534-2525		
orporation			
			
	DATE: August 30, 1988 OF: City Hall-Orangeburg		

NUS CORPORATION AND SUBSI	TELECON NOTE		
CONTROL NO.	DATE: March 23, 1988	TIME: 1430	
DISTRIBUTION: Champion International F4-8801-06			
BETWEEN: Thomas F. Berry, Owner	OF: Berry Drilling Company	PHONE: (803) 593-4027	
AND: Jerri Higgins, NUS Corporation	gen		
DISCUSSION:			



GROUND-WATER RESOURCES OF ORANGEBURG COUNTY, SOUTH CAROLINA

By George E. Siple



BULLETIN NO. 36

SOUTH CAROLINA STATE DEVELOPMENT BOARD

DIVISION OF GEOLOGY

1975

Prepared by the U. S. GEOLOGICAL SURVEY

in cooperation with the SOUTH CAROLINA STATE DEVELOPMENT BOARD

GROUND-WATER RESOURCES

INTRODUCTION

Orangeburg County, with an area of 1,105 square miles, is the second largest county in the State. Located in the south-central part of South Carolina it is also the second largest county in the Coastal Plain province, within which it is wholly contained.

Inasmuch as the county extends across at least one major physiographic boundary and is underlain by two most productive and most important aquifer systems within the State, it is uniquely representative of almost all ground-water regimes within the Coastal Plain. The only major ground-water problem not prevalent here is saltwater contamination, (although brackish water does exist in the buried crystalline rocks) inasmuch as it is almost centrally located between the Fall Line and the Atlantic Coast.

Historically (originally) the predominant use of ground water was to meet agricultural or domestic needs. However, with the rapid growth of towns and cities, and the accelerated change from an agricultural to an industrial economy, the need has shifted towards supplying larger amounts of ground water for municipal and industrial use.

Purpose and Scope

The purpose of this report is to present the available data on the ground-water resources of the county, along with such evaluation and interpretation of these data as seem warranted.

Inasmuch as ground water constitutes an important, if not the most important, mineral resource of the area (and one that is replenishable), it was originally planned to include a description of the general nature and occurrence of this resource in the mineral report. The present report has been prepared largely from data obtained previously by the author during the course of a general areal study of the South Carolina Coastal Plain. These data were supplemented by some additional information on wells obtained from drillers and from other sources. No test-well data nor adequate down-hole geophysical, hydraulic, or chemical data that are normally requisite to an informative evaluation of ground-water resources

were available for use in this report. Thus, it is not intended to represent an intensive description of the occurrence, distribution and utilization of ground water in this county, but it is hoped it will indicate the primary dimensions of these parameters, including the inadequacy of the present data. It is expected that a more complete or intensive study will be made at some future time.

Previous Investigations

No previous reports have been prepared specifically on the ground-water resources of Orangeburg County. Cooke (1936) listed the depth, diameter, and water level of several wells throughout the county, and included chemical analyses of water from 7 wells and a spring (Tables 5 and 6).

In a report on ground-water conditions through the state, Siple (1946) described the general geology and hydrology of the area and included a table of well data for 10 municipal wells, with chemical analyses of water from 4 wells. Some water-quality and water-level data for this area are given in a report by Stock and Siple (1969).

An appraisal of the county's present water-supply sources and facilities along with projected plans for future water development was given in a report prepared by the consulting firm of Lyles, Bissett, Carlisle and Wolff (1969). This report, entitled, "Orangeburg County Comprehensive Water and Sewage Plan" summarizes the discharge data and chemical quality of the major streams. It also includes geologic and geohydrologic data, excerpted largely from Siple (1957, 1947). It identifies one of the areas most susceptible to pollution of water supplies as that in the cavernous limestone area near Lake Marion.

Acknowledgments

The author acknowledges the cooperation and assistance of several persons, agencies, and well drillers, or well-drilling companies who contributed information on well depths, yields, descriptive logs, and other data which were of con-

GENERAL HYDROLOGIC ENVIRONMENT

Climate

Orangeburg County is characterized by a humid, temperate climate (Cfa in the Koppen classification). The mean monthly air temperature at Orangeburg during the period 1935-1964 (U. S. National Weather Service, NOAA, 1965) was 64.2°F. The mean annual precipitation (Table 1) at Orangeburg for the same period was 46.37 inches. The wettest month is August, with an average of 5.80 inches of rainfall and the driest month is November with 2.39 inches. The summer is warm and humid, characteristic of this part of the country. It has an average of 4 days with 100 degrees or higher temperature. The highest temperature recorded in Orangeburg was 107°F on July 25, 1952. The lowest temperature ever recorded was 6°F, on December 13, 1962.

A substantial part of the hurricane season occurs in July and August although the greatest frequency of hurricanes occurs in September. However, most of the summer precipitation is derived from late afternoon and evening thundershowers which account for 33 percent of the annual rainfall.

The fall season is the most pleasant time of the year, with moderate temperatures and a minimum amount of rainfall — 21 percent of the annual total. The winter is usually rather mild with the rainfall comprising about 22 percent of the annual total. The winter rainfall is generally of a more uniform type, dispersed over wide areas.

Spring is the season when tornadoes and severe local storms occur. Fourteen tornadoes were recorded in Orangeburg County during the 53 years preceding 1964. Spring precipitation accounts for 24 percent of the annual total.

Drainage

All of the major streams traversing Orangeburg county originate in the Coastal Plain and represent consequent streams in a mature stage, draining to the southeast (see fig. 7c). The Santee River drains into Lake Marion and so transmits water from two streams, the Congaree and the Wateree although they originate in the Piedmont, they are confluent in the Coastal Plain to form the Santee Significant stretches of the major stream valleys exhibit asymmetric transverse profiles, particularly those of the Santee and South Fork Edisto systems. Tributaries on the left bank of the major streams are longer and more numerous than those on the right bank. Tributaries on the left banks of the North and South Edisto Rivers have a parallel to sub-parallel pattern whereas those in the immediate vicinity of Orangeburg have nearly a radial pattern.

An area of approximately 75 square miles of Orangeburg County drains into the Santee River or Lake Marion. An area of about 300 square miles drains into Four-Hole Swamp and about 730 square miles are drained by the North and South Edisto Rivers. Near Branchville, in the southerr part of the county, the North and South Edisto Rivers join to form the Edisto River. Four-Hole Swamp and the Edisto River become confluent beyond the southeastern boundary of the county

The relation between surface streams and ground water is discussed in the section on well yields.

Geomorphic and Stratigraphic Setting

The range of geologic and geomorphic environ ments present within Orangeburg County bears a significant role in the occurrence, distribution movement, and quality of its ground waters. The sequence of stratigraphic units and their water-bearing characteristics are indicated in the columnar section (Table 2).

The county is roughly three times as long as it is wide and elongated generally in a northwest southeast direction, positioned in the south-centra part of the Coastal Plain province (fig. 2)

TABLE 1. CLIMATOLOGICAL DATA FOR ORANGEBURG COUNTY AND VICINITY (FROM U. S. NATIONAL WEATHER SERVICE, NOAA, CLIMATOLOGICAL SUMMARY 1965)

		(Temperature (°F)			Precipitation (inches)		:hes)
Station	Years of Record	Averag Max.	e Daily Min.	Mean Annual	Mean Annual	Greatest Daily	Date
Orangeburg	1935-1964	76 .0	52.4	64.2	46.37	7.80	9/48
Blackville	1935-1964	76.0	52.7	64.4	45.93	7.53	9/59
(Barnwell County)							

TABLE 2. STRATIGRAPHIC UNITS AND THEIR WATER-BEARING CHARACTERISTICS, ORANGEBURG COUNTY AND VICINITY*

(The stratigraphic sequence was agreed upon originally by Pooser and the author, for inclusion in the joint report. The suggested new term, Orangeburg Group has been approved by the Geologic Names Committee, U. S. Geological Survey).

SYSTEM	SERIES	FORMATION
CRETACEOUS (?) CRETACEOUS	UPPER	PEEDEE FORMATION (Navarro age)
		BLACK CREEK FORMATION (Taylor age)
		ELLENTON FORMATION (Austin age)
CRETACEOUS	UPPER	TUSCALOOSA FORMATION
	LOWER (?)	UNNAMED UNIT
TRIASSIC (?)	UNNAMED UNIT	
PRECAMBRIAN TO PERMIAN	PRE-TRIASSIC CRYSTALLINE ROCKS UNDIFFERENTIATED	

^{*(}Siple and Pooser, 1975)

DESCRIPTION AND WATER-BEARING CHARACTERISTICS

Greenish gray glauconitic, quartzose sand interbedded with lenses of sandy marl or limestone and thick dark gray to black clay. The formation in the eastern part of the Coastal Plain is not very permeable but in Orangeburg County it appears to have greater permeability and is possibly thicker than might be expected (400 ft). Large-diameter wells developed in this unit should yield several hundred gpm.

Gray, medium to coarse grained, glauconitic, phosphatic quartzose sand interbedded with gray to black lignitic, pyritic clay. Sands in the Ellenton are of a coarser grain and contain selenite. They might be hydraulically connected with the Tuscaloosa Formation. Insufficient number of wells to define potential yields, but the unit is considered a major aquifer. Water is characteristically high in dissolved iron and sulfate.

Tan, buff, red and light gray quartzitic to arkosic, micaceous, medium to coarse sand and gravel, interbedded with red, purple, brown and gray clay or kaolinitic clay. Thin beds of dark gray to black clay occur in the basal half of the formation separating the formation into two or three aquifers. Aquifer tests in adjacent Barnwell County indicate values up to 400,000 gpd/ft for transmissivity and a storage coefficient of about 3x10⁻⁴. The Tuscaloosa Formation is the most important aquifer in the State, with well yields up to 3,600 gpm. There are only four wells in Orangeburg County developed in this unit, and their average yield is about 1,500 gpm. The water is very low in dissolved solids and has a low pH. Some waters are high in dissolved iron, oxygen and sulfate.

Clastic fanglomerates and conglomerates consisting mainly of red and brown claystone, siltstone and sandstone with a few black shales and scattered gray calcareous nodules. In some basins the sediments are interbedded with basalt flows and have been intruded by sills and dikes and diabase. Extremely low hydraulic conductivity is characteristic of these rocks. They occur only in the subsurface and their water quality is very poor, having a hardness of more than 5,000 mg/l and a chloride content exceeding 6,000 mg/l.

Foliated mixtures of hornblende gneiss, quartz-feldspar gneiss, chlorite schist, quartzite and phyllite with veins of calcite and pink zeolites. Water occurs and moves through interlacing fractures very fine in diameter that transmit virtually no water or through wider fractures which yield several gpm to wells. However, most of the water is high in dissolved solids. It is a sodium-sulfate type and not usable for drinking or most industrial purposes. The water is brackish, but not saline.

STEM SERIES		TABLE 2.
FRIES		. STRAI
	ORANGEBURG COUNTY AND VICINITY (continued)	IGRAPHIC UNITS AND THI
FORMATION	AND VICINITY (continued)	TABLE 2. STRATIGRAPHIC UNITS AND THEIR WATER-BEARING CHARACTERISTICS,

			T	ERTIARY					QUATERNARY	SYSTEM	
	EOCENE		OLIG-		MIOCENE		PLIO-	PLEISTOCENE	SE	1	
PALEOCENE	LOWER	MIDDLE	UPPER	OCENE	LOWER	MIDDLE	UPPER	CENE (?)	TO HOLOCENE	SERIES	
		ORANG GRO	OUP							,	9
		Claiborne Age	Jackson Age								ANG
UNNAMED UNIT (Midway age)	BLACK MINGO FORMATION (Wilcox and Midway age)	Congaree Warley SANTEE Formation Formation Formation		COOPER MARL		HAWTHORN (?) FORMATION	DUPLIN FORMATION	UNNAMED UNIT	SURFICIAL DEPOSITS	FORMATION	ORANGEBURG COUNTY AND VICINITY (continued)

DESCRIPTION AND WATER-BEARING CHARACTERISTICS

Red, gray and white poorly sorted clayey quartzose and arkosic sand and gravel. The deposit is of minor importance as an aquifer, as it generally occurs above the water table.

Tan, red and gray silt, sand and gravel, stained with iron oxide and associated with buff to brown silty clay. It has been referred to locally as "high-level" gravel, comprising the upper part of deposits equivalent to the Citronelle Formation. Because it is only a few tens of feet thick and positioned mainly above the water table, it has no significance as an aquifer.

Buff to yellow, arenaceous, fossiliferous clay or marl with interbedded white to gray quartzose sand with numerous shells or shell hash. Sand and shell transmit water in moderate amounts but thin deposits afford only small yields to wells. Clayey beds act as confining bed layer.

Tan, reddish-purple and gray compact sandy clay with some included gravel and limonite nodules; small amounts of water available to dug wells.

Olive-green foraminiferal marl with lenses of quartzose sand. Functions primarily as a confining bed but in coastal areas the sands contain brackish water.

Tan, red, brown, yellow, buff and mustard-colored sands interbedded with red, tan, green, ochre and purple clays and some white calcareous clays. The most permeable beds in the group are the quartzose sands in the Congaree and McBean Formations. Data from aquifer tests in an adjoining county indicate hydraulic conductivity values ranging from 200 to about 1,000 gpd/ft², transmissivity values of 50,000 to 100,000 gpd/ft and a storage coefficient of about 2x10⁻⁴. Yields of 6-inch wells range from 50 to 400 gpm. The water is acidic and high in iron. The Santee Limestone, a white to gray, highly fossiliferous, cherty, glauconitic and dolomitic limestone, is probably the second most productive aquifer in the county. Yields of 8 to 10-inch wells are recorded up to 700 gpm. The water is moderately hard to hard.

Fine light gray to yellow sands and sugary sandstone or bioclastic limestone interbedded with gray shale or fuller's earth overlying dark gray to black pyritiferous, lignitic shales containing numerous macrofossils and leaf impressions. Insufficient data to indicate range of well yields but probably moderate and less than those from clastics in the Orangeburg Group. Water is likely to be acidic and high in dissolved iron.

Physiographically, it is divided into at least two major and distinctive topographic provinces: the Upper Coastal Plain, occupying the northwestern part of the county and the Lower Coastal Plain. comprising the southeastern part. Nearly twothirds of the county lies within the Lower Coastal Plain.

The two physiographic provinces are separated by the Citronelle Escarpment (Doering 1960), a southeast-facing scarp extending across the county from southwest to northeast (see fig. 4). Above the scarp, to the northwest, the topography is typified by moderate to high relief ranging from 250 to 420 feet above sea level. The upland plateaus are characterized by broad interfluve areas, dissected by relatively narrow, deep valleys cut by a normally dendritic surface drainage. This area comprises part of the Aiken Plateau. as described by Cooke (1936, p. 9). The Surry Scarp, at an altitude of about 100 ft, crosses the southeastern part of the county between Lake Marion and Four-Hole Swamp.

Beneath the Upper Coastal Plain lie mostly unconsolidated, but in part consolidated, deposits of sand, gravel, buhrstone, and clay of Early Cretaceous to Pleistocene age. The most permeable aquifers in this stratigraphic section include the sand and gravel beds within the Tuscaloosa1 and Ellenton Formations, the sand and possibly limestone beds in the Peedee Formation, the sands within the Black Creek Formation, the Black Mingo Formation and the sand beds in the Orangeburg Group. Those of the latter are confined largely to the Barnwell, McBean, and Congaree Formations.

Water-table conditions prevail in the uppermost or shallowest aquifer(s), principally those in the Barnwell and McBean Formations within the Orangeburg Group. Some perched water bodies also occur in these units. Artesian conditions prevail for the most part in all deeper or older aquifers within the stratigraphic section. The water-table aquifers are recharged directly by rainfall throughout the region and discharge is effected locally by ground water moving from topographically higher areas down the hydraulic gradients to areas along nearby surface streams or lakes. Where the upland plateaus in the Upper Coastal Plain are deeply dissected, comparatively deep static water levels occur in wells screened in the deeper aquifers. An additional factor in the occurrence of deep static water levels is the comparatively high permeability of these sand and gravel aquifers, which facilitates acceleration of rapid ground-water drainage following a period of heavy rainfall.

The artesian aquifers are recharged by precipitation in areas several miles to the northwest in topographically higher areas in adjacent Aiken and Lexington Counties and by leakage through overlying younger beds in Orangeburg County. Some of the artesian water is discharged into the North Edisto River in the northwestern part of the county, but probably a large percentage of the water from deep (Cretaceous) artesian aquifers discharges by moving down the hydraulic gradient in a generally southeastern direction to points in the lower Coastal Plain and beyond.

Definitive description of the potentiometric surface of the Cretaceous aquifers in the Upper Coastal Plain is not possible at this time because only a few wells are known to be developed in these aguifers, and these are all located in one small area. Similarly, owing to the lack of sufficient data, it was not possible to construct piezometric or structure-contour maps for any of the aquifers or formational units throughout the county. In lieu of this more definitive interpretation, depths to the water table and the piezometric surface are given in Tables 3 and 3a.

From the toe of the scarp and extending southeastward to the lower boundary of the county, the area is characterized by a flat almost featureless plain comprising the Lower Coastal Plain. Altitudes here range from about 220 feet above mean sea level at the toe of the scarp to about 74 feet above mean sea level in the lowermost or southeastern areas. The toe of the scarp is nearly coincident with the up-dip limit of the Santee Limestone, a white to gray calcarenite and calcirudite of Eocene (middle Claiborne) age. Cooke and MacNeil (1952) indicated the presence of the Castle Hayne Limestone (of late Claiborne age) overlying the Santee, near the southeastern end of the county. However, owing to the fact that the two limestones are very difficult to differentiate in the field, the entire limestone section of middle Eocene age is referred to in this report as the Santee Limestone. There is a distinct possibility that additional thinner beds of limestone occur in the subsurface within deposits of Paleocene, early Eocene, or Cretaceous age.

TABLE 3. RECORDS OF WATER WELLS IN ORANGEBURG COUNTY, S. C.

			_	PTH (t)			WAT	ER LEVEL					
WELL NUMBER	OWNER AND/OR LOCATION	DRILLER	Total	Casing	DIAMETER (in)	GEOLOGIC FORMATION	Above (+) or Below Land Surface (ft)	Date	YIELD (gpm)	DRAWDOWN (ft)	TEMPERATURE (°F)	USE	REMARKS
1	Town of North, S. C.	J. R. Connolly	135	105	10	То	50	1-29-46	100			PS	Drilled 1944. Filled in.
1A	do	do	130		10	do	46.85	5-29-62	100		66	PS	Drilled 1946. C.A. Ra- diometric analysis. Unused.
2	do	do	125	95	10	do	38.08	10-28-61	100			PS	Unused-filled in.
2A	do	do	125±		10	do			100		66	PS	Drilled 1946. C.A. Radiometric analysis, June 1958; unused — filled in.
3	Town of Springfield, S. C.	do	138	138	8	do	35	Jan. 1948	200		61	PS	P.A.
4	do	do	100- 120	8	: :	do	35	do	200			PS	
5	Town of Norway, S. C.	do	250	250	10	To-Ts	ab. 40	Feb. 1946	125	25		PS	Water is high in dis- solved iron.
6	Town of Branchville, S. C.	do	800		8	Kp-Kt	flows		60			P S	Drilled 1927. C.A.
7	do	do	120	100	6	Ts	10-15	Mar. 1946				PS	Drilled 1945.
8	Town of Holly Hill, S. C.	Va. Drl. & Well Co.	278		8	do	12	do	250			PS	Drilled 1935. 10 ft of screen.
9	do		278		8	do	12	do	250			PS	20 ft of screen.

Geologic formations are: To — Orangeburg Group; Ts — Santee Limestone; Tl — Black Mingo Formation and unnamed Paleocene Unit undivided; Kp — Peedee Formation; Ku — Black Creek and Ellenton Formations undivided; Kt — Tuscaloosa Formation; P.A. — partial chemical analysis; C.A. — complete chemical analysis; S.C. — specific capacity reported in gallons per minute per foot of drawdown; gpm-gallons per minute; TH — total hardness; Dom — domestic supply; Ind — industrial supply; Stk — used for stock; PS — public supply; Irr — irrigation supply; Mil — used for military base; S.S. — stainless steel (screen); screen settings in feet below land surface. In yield column, P = amount pumped, F = amount flowing under natural head, Ls — limestone; Sd — sand.

TABLE 3. RECORDS OF WATER WELLS IN ORANGEBURG COUNTY, S. C. (continued)

5			DEI (f	HIY			WAT	ER LEVEL					
9 WELL NUMBER	LOCATION	DRILLER	Total	Casing	DIAMETER (In)	GEOLOGIC FORMATION	Above (+) or Below Land Surface (ft)	Date	YIELD (gpm)	DRAWDOWN (ft)	TEMPERATURE (°F)	USE	REMARKS
37	Town of North, S. C.	Heater	124	124	8	То	37	8-14-57	260	14		PS	Drilled 1957. Screens 95-103; 113-121. S.C. = 1.9.
38	USGS, SC-6, 2 mi. N. of Elloree	USGS	75	0	5	To-Ts						Obs	Test well drilled with power auger in Feb. 1958. Top of Santee Ls = 55 ft.
39	U. S. Air Force, North	Layne-Atlantic Co.	150			do						Mil	
40	Bowman, S. C.	Ackerman	350	347	10-8	do	flows	Feb. 1959	200	88+		PS	Drilled 1959. Screens 224-234; 334-344. S.C. = 2.3.
41	G. M. Norris, 1¾ mi. from Vance	Hughes	839			Kt						Dom	Drilled prior to 1925. Limestone from 35- 169 ft.
42	Orangeburg, S. C.	do	200		8	Ts	+20	Feb. 1916	200			PS.	Drilled 1916.
43	do	do	206		10	do	+20	June 1916	200			PS	Do.
44	do	do	192		8	do	+20	do	500	50		PS	Drilled in 1916. S.C. = 10.
45	Norway, S. C.	Layne-Atlantic Co.	160	146	6	To-Ts	25	July 1955	72	115		PS	Drilled 1955. Screen: 125-140. S.C. = 0.62.

Geologic formations are: To — Orangeburg Group; Ts — Santee Limestone; Tl — Black Mingo Formation and unnamed Paleocene Unit undivided; Kp — Peedee Formation; Ku — Black Creek and Ellenton Formations undivided; Kt — Tuscaloosa Formation; P.A. — partial chemical analysis; C.A. — complete chemical analysis; S.C. — specific capacity reported in gallons per minute per foot of drawdown; gpm-gallons per minute; TH — total hardness; Dom — domestic supply; Ind — industrial supply; Stk — used for stock; PS — public supply; Irr — irrigation supply; Mil — used for military base; S.S. — stainless steel (screen); screen settings in feet below land surface. In yield column, P = amount pumped, F = amount flowing under natural head, Ls — limestone; Sd — sand.

The Santee Limestone is overlain by a comparatively thin cover of sand, gravel, clay, and shell hash of Miocene, Pliocene (?), and Pleistocene age (fig. 3). These deposits constitute the Duplin Formation, an unnamed Pliocene (?) unit consisting of sand, clay, and gravel overlain by the terrace deposits of the Wicomico, Sunderland and part of the Coharie Formations as referred to by Cooke (1936, p. 8). Beneath the Santee Limestone are deposits of early Eocene to Late Cretaceous age. These include sand, gravel, clay, and limestone rock within the Warley Hill, Black Mingo, Peedee, Black Creek or Ellenton, and Tuscaloosa Formations. Each of these units contains permeable beds comprising one or more aquifers. Dark gray to black carbonaceous clays function as confining beds in this hydrologic system. The thickest and most permeable aquifers are composed of coarse sand and gravel contained within the Ellenton and Tuscaloosa Formations and medium to coarse sand in the Peedee Formation. The Santee Limestone constitutes the next most permeable aquifer in the stratigraphic section of this area. However, more wells are developed in the limestone than in the sands of Cretaceous age, largely because of economic factors. The shallow depth of the limestone and its greater cohesiveness and density require less drilling and a smaller amount of casing, thus permitting "open-hole" construction, that is, without the installation of screens or slotted casing. Otherwise these items would constitute an additional cost to the construction of a well.

A large number of publications have been written on the subject of limestone hydrology, therefore, an in-depth discussion will not be attempted in this report. Lyell (1845), Adams and Swinnerton (1937), Swinnerton (1942), Jordan (1950), Kaye (1957), Stringfield (1936, 1966), Stringfield and LeGrand (1966), LeGrand and Stringfield (1966), LaMoreaux and Powell (1963), Counts and Donsky (1963), Callahan (1964), and Siple (1960, 1967), described the mechanics of solution phenomenon in limestone terraces and the geometry of ground-water circulation associated with them.

As indicated above, the Santee Limestone has a comparatively thin cover of sand, clay, and shell hash. Subaerial erosion and solution during Pleistocene time and subsurface solution of the limestone has formed a paleokarst topography in some parts of the area, in particular the discharge area bordering the south shore of the Santee

River and Lake Marion (fig 4). This area is characterized by numerous sinks, Carolina bays, and literally thousands of "mini-bays" - a designation given by the writer to mass concentrations of what appear to be Carolina bays of much smaller size than those heretofore described in the literature. A very intensive development of sinks, dolines, jamas and bays may be seen on the topographic map (particularly those shown on the Eutawville quadrangle) and aerial photos for the area between Eutawville and the eastern and southwestern boundaries of the county (Siple, 1960). Underground streams emerging from limestone caves or cave groups in this area drain into Lake Marion on the south shore. Collapsed dolines occur in several of these caves.

Probably a significant factor in the location and density of these sinks and caves was the action of the Coriolis force, which in the northern hemisphere, deflects southward flowing streams towards the right bank. This drift of the streams to the southwest cuts a steep bluff on this side of the stream and a slip-off or gentle slope on the northeast or left bank. The elevated position of the limestone on the southwest side, facilitates an accentuated solution process in the subsurface, producing the caves and tubular openings through which ground water is discharged to the main stream and its tributaries. On the left bank, much of the limestone is removed by erosion, leaving a much smaller number of visible sinks or subterranean streams.

On the southwestern boundary of the county, a somewhat similar geomorphic-hydrologic condition prevails, except that the South Fork Edisto River has not been incised as deeply into the underlying beds and Orangeburg County lies on the left bank, or slip-off slope, of this stream.

Carolina Bays

Numerous undrained shallow depressions, having an elliptical or ovate shape, whose major axes are alined in a northwest-southeast direction, and whose southeastern rims are comprised generally of a fine white sand, occur in the lower Coastal Plain section of Orangeburg County. These are characteristic of the "Carolina bays" originally described from their occurrence in the northeastern part of the S. C. Coastal Plain and southwestern part of the North Carolina Coastal Plain. The literature is too copious to reproduce here, but most of the references are included in: Glen (1895);

Cooke (1933, 1954); Melton and Schreiver (1933); Johnson (1942); and Thom (1970). Some bays can be identified on topographic maps, but the distinct nature of their outline and orientation are more easily recognized from aerial photographs (fig. 4).

Many hypotheses have been proposed to account for the origin of the bays but to date (1975) none appears to have unreserved acceptance in its explanation of all features exhibited by the bay structure. Their origin has been attributed to meteroic swarms, artesian springs, hollows found at the foot of terraces and between dunes, submarine scour, solution underlying calcareous material and subsequent subsidence at the top of the overlying beds, nests made by schools of fish moving their fins in unison, gyroscopic eddy currents, and deflation by prevailing winds and ponds formed in sand, oriented in the direction of maximum wind velocity. It is beyond the scope of this paper to comment on or refute these many hypotheses. The basic premises favored by the author are described in Siple (1960, 1697) so a detailed discussion will not be included here. However, inasmuch as the author believes the bay to have a distinct relation to the hydrologic regimen of the area and because some of his conclusions have been misquoted, some comment or explanation appears necessary. Thus, some references have quoted the author as subscribing to the solution theory of bay origin, whereas a more accurate designation would be that of a complex or multiple origin. Solution appears to have had some part in the distributional selectivity of the bay structure, but additional extraterrestrial forces (such as wind or the Coriolis force) must have had some part in the orientation, shape and formation of the bays' rims.

It is the author's belief that the Carolina bays are unique to the two Carolinas and contiguous parts of Georgia and that the rounded lakes alluded to as bays elsewhere around the world, such as those in Maryland, Alaska, Bolivia and Argentina, are definitely not Carolina bays. Deflation caused by prevailing winds would not appear to be the sole cause for formation of the bay or else there would be many more found on dune and terrace topography both within this state and all over the world. This is not to say that wind could not have been one of the formational agents, as indicated above.

The Carolina bays in Orangeburg County occur typically on the upland flat interfluve areas underlain by soluble calcareous deposits. As might be observed from Figure 3, they occur most prominently to the southeast of the Citronelle Escarpment. They are not entirely confined to areas southeast of this physiographic boundary but this is believed to be due to the fact that the landward extent of present or relict calcareous beds extends northwest of the boundary. The Santee Limestone coincides nearly but not exactly with this escarpment. Some of this limestone extends a short distance to the northwest of the Escarpment.

The major axes of the bays are alined approxinorthwest-southeast. They have an ellipticity (ratio of short axis to long axis) ranging from 0.6 to about 0.7. They are characteristically developed on surfaces underlain at comparatively shallow depths by carbonate deposits: the Santee Limestone or sand and shell hash of the Duplin Formation (Siple, 1960). Their age in Orangeburg County is probably Pleistocene to Holocene although some appear to be older in areas closer to the Fall Line. The shoreline of the Duplin Formation is thought to coincide with the present position of the Citronelle Escarpment. The bays may be distinguished from the limestone sinks by their shape and orientation — the sinks are normally deeper than the bays, are much smaller in size, and are nearly conical or irregular in shape. As indicated above, in addition to the larger or normal sized bay, there also appear to be hundreds of much smaller sized, or "mini" bays occurring within the area. The major axes of the larger bays are 2 miles or more in length; whereas, those of the smallest may be as little as 100 feet in length (fig. 4).

The bays and also the sinks occur less frequently or not at all in those areas where the limestone is covered by a significant thickness of less permeable (marl or clay) material of middle Miocene age (Hawthorn (?) Formation) and, Oligocene age (Cooper Marl) or younger terrace deposits of Pleistocene to Holocene age. This overburden of finer material might also have facilitated the formation of a case-hardened layer on the surface of the buried limestone and thereby inhibited or retarded its solution by circulating ground waters. No bays were observed in this area on the alluvium bordering the major streams, although such occurrence is evident to the northeast, in Marion County.

Originally the bay was an undrained (surficially) depression and after some period of time, a layer of humate, silt and clay accumulated in

developed in the alluvium of the major streams.

tions. No wells except the four described previously as in or near Orangeburg are thought to penetrate the lower parts of the Black Creek Formation or the Ellenton Formation in other parts of the county. However, it is the sands within these formations and deeper sands of pre-Austin age that have the greatest potential for future well development in the county.

WELL YIELDS AND GROUND WATER UTILIZATION

Recorded well yields in Orangeburg County range from 5 to 1,500 gpm. The yield of any single well depends upon its diameter, depth, construction, presence of nearby wells and the number and nature of aquifers from which it obtains water. Properly constructed and developed large (10-12 inch) diameter wells screened in 200 to 600 ft of sands of Cretaceous age can be expected to yield from 1,200 to 2,000 gpm or possibly more. Yields of this magnitude have already been obtained from wells in the vicinity of Orangeburg. Comparable yields can be expected in nearly all parts of the county from wells constructed in a similar manner. Exceptions might be wells located in the extreme northwestern part, where the Cretaceous sands are thinner and those located in the extreme southeastern part, where the hydraulic conductivity is likely to be lower. Thus sands and gravels in the formations of Cretaceous age constitute the most important and highest yielding aquifers in Orangeburg County, or in fact, throughout the State.

Yields as high as 600 to 700 gpm have been reported from wells developed in the Santee Limestone. Farther down basin, in Jasper County, single wells in this formation yield as much as 2,600 gpm. The limestone is not as porous nor as thick in Orangeburg County as it is lower in the basin, and thus its transmissivity is lower. The term limestone gives the connotation that a continuous thickness of solid rock is typical of the formation. However, this is not the case, inasmuch as in some areas the limestone is interbedded with sand, clay, or marl. If the interbedded sands or clayey sands have comparatively high hydraulic conductivities, then the well yield will probably be high; if not, the yield will be lessened in proportion to the amount of fine-grained clastic beds encountered in the well. In addition, the degree to which the limestone is interlaced with connected cavities or large pore spaces also affects well yield. That such a range in interconnected pore spaces does occur is evidenced by the fact that some closely spaced wells of similar construction and developed in the limestone do not obtain similar yields. As reported by Moore (1941, p. 35), water yields in test wells near Vance were lower than those farther down the Santee River near Eutaw Springs because of an apparent increase in porosity and number of cavities in this direction. One well near Eutaw Springs was reported as having been pumped at a rate of 600 gpm with no evidence of appreciable drawdown.

About 9 miles southeast of Eutaw Springs, a major crushed stone producer operates a limestone quarry near Cross, in Berkeley County, adjacent to the Orangeburg County line. In order to dry mine the limestone, it is necessary to dewater the infiltrating ground water and this is accomplished with 6 pumps, each having a capacity of 1,000 gpm. It is estimated that the 1973 rate of dewatering amounted to 4.32 mgd (million gallons per day).

Almost all figures listed in the "yield" column of Table 3 represent reported values. Usually the source is the driller, although in some instances it is the owner of the well. The yields reported for small diameter (2 to 4 inch) wells are not representative of potential yields that might reasonably be expected from properly constructed and developed larger-diameter wells. This applies specifically to wells OR-53 through OR-74 and OR-139 through OR-168 listed in the table, although other wells of small diameter also have little value as indicators of potential yield. In addition, information concerning drawdown for the reported yield is virtually non-existant for the older wells and for those of small diameter. Owing to deterioration of the well casing or screen, along with a possible lowering of the potentiometric level, the yields of many wells tend to decrease with time so that in general, the older the well, the less

representative is the value indicated in the table for its yield. Some wells are finished with "openhole" construction. These wells have their casing sealed in the first dense layer having continuous connection with the aquifer. Thus, in wells developed in the limestone the casing would be set either in the top of the limestone or in an impermeable clay or marl overlying the limestone. Developed in this manner the well has no screens or slotted casing set opposite the aquifer. In this type of well, the yield tends to decrease with age because of the movement of smaller sized grains toward the uncased section of the hole, causing it to fill in, or because the walls of the well itself cave in, due to side-wall pressure.

Another method of approximating groundwater yield is to estimate this factor as a component of the base flow of streams. The Upper Coastal Plain area of Orangeburg County is underlain at and near the ground surface by the Orangeburg Group (Barnwell, McBean and Congaree Formations) and the Hawthorn Formation. These units consist largely of permeable material so that proportionately more water infiltrates the soil than runs off the surface. Thus the stream discharge consists largely of ground-water discharge. Using the discharge which takes place 75 percent of the time (interpreted from Stallings, 1967), as a conservative estimate of the groundwater increment to the streams, then this percentile discharge as measured on the North and South Forks of the Edisto River at Orangeburg and Denmark, averages 0. 515 cfsm (cubic feet per second per square mile). This represents a groundwater discharge from the shallow aquifers of over 330,000 gpd (gallons per day) for each square mile. Similar computations for the drainage basin of the Edisto River in the lower Coastal Plain as measured by the gaging station near Branchville, indicate a ground-water discharge of about 392,000 gpd/sq mi. These quantities are considered conservative because the stream does not intercept the full depth of the aquifer and significant amounts of water discharge as underflow in accordance with the regional gradient. In addition, those ground waters which occur at comparatively shallow depths but are semi-confined by overlying clays or other nearly impermeable beds, also do not contribute their full volume to this streamflow.

The same type of evaluation probably cannot be applied to the drainage basin of Four Hole Swamp. This area is topographically low, with little relief, and is underlain by porous limestone. High rates of evapotranspiration coupled with a low density of stream occurrence and the fact that some streams may be losing water rather than gaining water from the ground make such an evaluation unreliable.

Ground Water Utilization

Ten municipalities in Orangeburg County maintain a public water supply and nine of these utilize ground water as a source. The city of Orangeburg uses the North Edisto River as a source. This proportionate division between ground and surface water sources is typical of utilization elsewhere throughout the Coastal Plain in this state, where all except three municipalities utilize ground water as a source for public water supplies.

As shown in Table 4, nine out of ten municipal supplies in counties adjoining Orangeburg also use ground water. The data in the table indicate a total capacity of 5.147 mgd (million gallons per day) and an average use of 0.813 mgd for the public supplies within Orangeburg County. Comparing these figures with adjoining counties, where the nine municipal supplies have a reported capacity of 7.956 mgd and an average use of 3.547 mgd, those cities or towns in Orangeburg County appear to have, at the present time, a substantial reserve of ground water available for future utilization. According to these data, the 19 municipal wells within the county have an individual average reported yield of nearly 200 gpm.

An unknown number of small industries or commercial establishments throughout the county use ground water, but no accurate estimates are available at this time concerning the amount of water used. The four largest industrial users of ground water are listed in Table 5, which indicates that 11 wells having a capacity of 7.952 mgd pump approximately 4.912 mgd. This is nearly six times the amount used for public supplies and none of the amount listed for industrial use is purchased from municipal suppliers. Water used by the Holly Hill Lumber Co. and Santee Portland Cement Co. (common ownership and location near Holly Hill), together with that used by Greenwood Mills, near Orangeburg, constitutes 96 percent of the large industrial use of ground water in the county. Not included in this total is the appreciable amount (4.32 mgd) used to dewater the crushed stone quarry at Cross, on the southeastern boundary of the county.

TABLE 4. MUNICIPAL WATER SUPPLIES IN ORANGEBURG COUNTY AND VICINITY (1972-73)

Municipal Supplies in Orangeburg County	No. of Wells	Total Capacity (MGD)	Avg. Daily Use (MGD)	Meter or Services ¹	Projected 1980 Use (MGD)
Bowman	2	0.215	0.100	271	N.A.
Branchville	2	0.180	0.075		N.A.
Cope	1	0.016	0.010	6	N.A.
Elloree	2	0.432	0.150	440	0.200
Eutawville	2	0.430	0.025	110	N.A.
Holly Hill	3	1.500	.070	486	.500
North	3	1.150	0.250	400	N.A.
Norway	2	0.36	0.055	110	0.055
Orangeburg	sw	8.00 ²	2.900 ²	7,4172	
Springfield	2	0.864	.078	320 🗽	0.120
Total	19	5.147	0.813	2,143	

Average daily use (gallons per person): 95.

²Not included in totals — surface water source.

	Supplies in
Adjoini	ng Towns

,													
St. George .		•	•	•		•	•		3	0.550	0.250	665	.258
Harleyville .				•					1	.130	0.022	215	0.530
Summerville									sw	1.000	0.850	3,200	
Bamberg							•	•	4	0.850	0.400	700	.392
Denmark	•								5	1.440	0.750	1,200	.850
Williston									4	1.940	0.700	800	N.A.
Salley									3	0.156	0.025	175	0.068
Wagener									3	0.380	0.225	500	.300
Swansea									3	0.790	0.075	220	N.A.
St. Matthews					•				3	0.720	0.250	96 0	.350
Total .										7.956	3.547	8,635	

Sources: Environmental Quality Control, S. C. Department of Health and Environmental Control; S. C. Water Resources Commission, and U. S. Geol. Survey (author's estimates).

Average daily use (gallons per person): 102.

SW - Surface Water Source.

NA - Not Available.

¹Serves an average of about 4 persons per meter

A substantial amount of ground water is used throughout most rural areas for domestic, stock, and irrigational purposes. No reliable data are available to indicate the quantities of water utilized for these purposes within the county, but wells OR-139 through OR-173 (Table 2) are used almost exclusively to supply water for stock. It is estimated that about 0.20 mgd is used for this purpose from these wells alone but the total amount of ground water used for stock within the county is probably several times this amount.

According to various agricultural agencies, very little ground water is used at the present time for irrigation in Orangeburg County. A few dairies in the Orangeburg and Bowman areas use irrigation to grow corn for silage and a few farms in the southeastern part of the county use it for truck farming. The use of ground water for irrigation requires a substantial investment in equipment and a high labor cost. These conditions and the fact that supplemental water is needed on an infrequent basis acts as a deterrent to the use of ground water for this purpose.

Whereas the ground-water resources of Orangeburg County are definitely under-developed, especially with respect to the sand aquifers within the several formations of Cretaceous age, additional or future development should take into consideration the effects of heavy pumpage in nearby wells. This has been demonstrated in the Orangeburg area where the first well (OR-49) developed in the Tuscaloosa Formation had a static water level of about 190 ft. msl (12 feet above land surface) in September 1963 and a flow of about 650 gpm. During June to Sep-

tember 1964, wells OR-79, OR-80 and OR-81 were developed in the same formation at a site about 334 miles south of well OR-49, and shortly thereafter were pumped almost continuously (6 days out of 7) at a rate of about 1,000 to 1,300 gpm each for several years. By 1971 there was a head loss of about 10 to 12 feet and a decrease in flow of over 500 gpm in well OR-49. This decrease in head is caused by a combination of the effects of discharge from well OR-49, the interference of discharging wells OR-79, OR-80, and OR-81 and a decrease in well efficiency. One method of estimating the possible head loss in well OR-49 due to distant pumping is to assume reasonable values for aquifer characteristics and calculate the drawdown that would occur in well OR-49 as a result of pumping wells OR-79, OR-80, OR-81 for a period of about seven years. Using the Theis non-equilibrium formula (Theis, 1935), and substituting values of 151,000 gpd/ft for the transmissivity, 2.5x10⁻⁴ for the storage coefficient, 3,000 gpm for the pumping rate and seven years for time of pumping, the drawdown at OR-49 is calculated to be about 16 feet. However, this formula assumes no recharge or leakage to the aquifer and some recharge must have occurred during this time. If the calculated drawdown in well OR-49 were reduced by a rough estimate for the effects of leakage or recharge and the decline caused by flow from well OR-49, then it appears to approximate the observed drawdown. A test of the maximum pumping rate in well OR-49, made on March 10, 1972, indicated this rate to be about 509 gpm, compared with an original yield of about 1,020 gpm. This decrease might be due partly to a loss of efficiency in either or both the pump and

TABLE 5. INDUSTRIAL USE OF GROUND WATER IN ORANGEBURG COUNTY (1972)

Industry	No. of Wells	Total Capacity (mgd)	Avg. Daily Use (mgd)
Holly Hill Lumber Co	5	1.540	0.200
Santee Portland Cement Co	2	1.512	1.512
Ethyl Corp	1	0.300	0.200
Greenwood Mills (formerly Fabric Services)	3	4.600	3.000
Total	11	7.952	4.912

The figures for Greenwood Mills represent those reported by the company. Remaining figures taken from Water Use in South Carolina, 1970, S. C. Water Resources Commission, March, 1971.

NUS CORPORATION AND SUBSI	DIARIES	TELECON NOTE
CONTROL NO.	DATE: March 24, 1988	TIME: 0930
DISTRIBUTION: Champion International F4-8801-06		······································
BETWEEN: Ackerman, G.W., Owner	OF: Ackerman-Carolina Drilling Company	PHONE: (803) 835-2100
AND: Jerri Higgins, NUS Corporation	ga	
DISCUSSION:		
Mr. Ackerman has drilled many wells i wells he drilled were into the "marl" (to 350 feet deep. Some wells were not content of iron in the water at this dearound 40 feet below the surface of the	he Santee Limestone) or deeper (Blac nore shallow, tapping the surficial a epth kept the number of wells to a n	k Mingo, Peedee) and were from 100 quifer (sand and clay), but the high
		e e

17.

Same and the same	
QUIREMENTS EMBER 10, 1986	111 entries in this log book will be made by Torri-Higgins
_ACTUAL AND OBJECTIVE	There is a second of the secon
ook:	Each page will be signed and
	dated: any and all corrections will
	be properly initialed.
	Signature - Krr. Hagins
 and distribution	Initials - I th
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	All notes and observations during
•	this well survey will be included
	in this log book. For more
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sheets	names addresses phone numbers
-	and well depths, refer to the
ts used description)	well inventory forms. Those conducting
ite)	-the recon have read + understand the work to
YOA, metais, etc.)	As confirmation of the understanding
_	of the above, I present my
;	signature
s stamped information of	Sters Wolker, Jerry Higgins
to accept the receipt for	Stintialus Ann Hogens
: be placed in the logbook.	Jour Angli
	Jan. 13, 1988 000001

nd ni cel weather, slightly evercust

I ist stop is the Water Treatment I lant. Follow they 601 into town, the right at intersection of they 301 with thighway 601 One mile. I with sintersection - bear off to right just before traffic light, then into Edisto Memorial Cardens. Take a right at stop sign, turn left at next street on left (seaboard St.), then follow about 0.5 mile and make first turn on left Then turn immediately to right, will see driveway. Water Plant, turn left onto liveway.

The we met Mr. Hank Rutland, In superintendent of the Water Frection ent Plant The plant intakes water from the North Edusto River

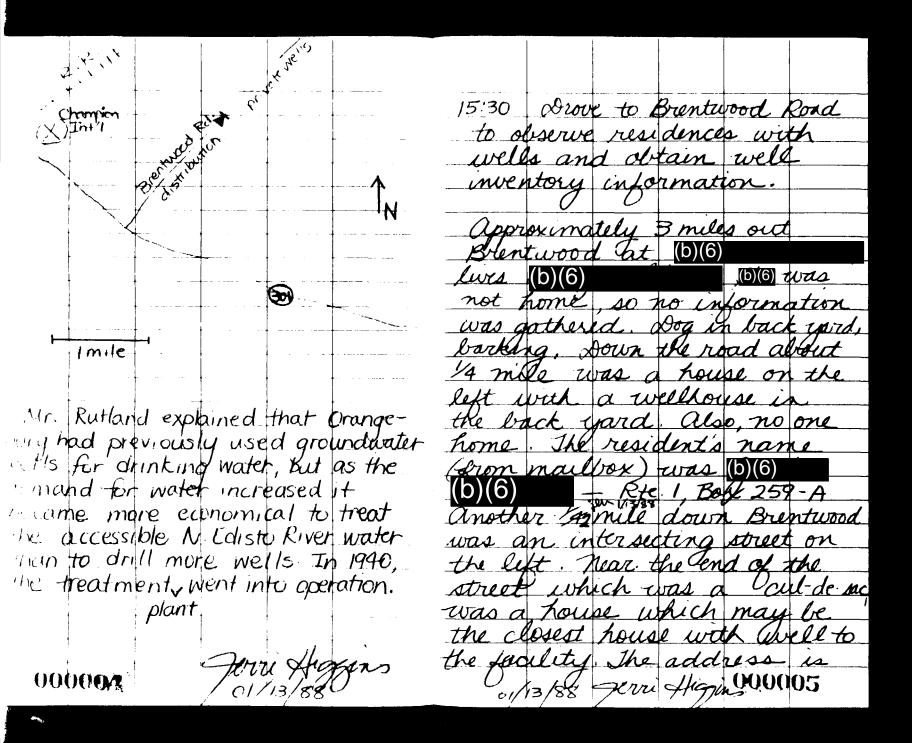
000002

Jari Aggins 01/13/88

which flows adjacent to the plant. The plant serves 19,000 customers, reaching as far as Wolfton & Jamison to the northwest and as far as Rowesville to the south There are many rural areas between Orangeburg and these towns which have private wells, however.

We were able to draw distribution lines of the water supply onto our topo maps of the area and get an idea where these rural areas with private wells are located. Of particular interest were residences along Brentwood Rd, which runs northeast after intersection with Highway 301 South. These residences which are beyond the distribution lines of the the water company, are the water company, are the locations with wells to the Champion International facility.

Jew Hogyns 1388 00000311



Rte. 1, Box 977, but no rame water supply, but he did not know about the in lox Well call neighbors Box 975 or (b)(6) at (Rtc 1, (b)(6) source of water. Since no one was home at the houses concerned, addresses and name and phone number were taken in order to obtain of this resident. Rt. 1 Bux 977 phone numbers upon return to allanta. 16:30 Drwing back to 301 (b)(6) (b)(6)and going north, we noticed a chorch on left side of street with a well house Brentwood (b)(6)Upon further inspection, we (b)(6) found the well was filled with dirt and no longer in We drive up the street which North on 301, we drove intersects Brentwood at the Movers house and spoke with mo young man who said he and his neighbors on that west were on the public

01/13/86 Jan Hayan

30000

by the facility, which is ramed U.S. Blywood (aka Champion Intl' at times) and verified the street name of Twe Chop Road (700 block) 01/13/88 Jani 4 hogen 000003

01/15/88 Facility is large and in Called information; obtained number for (b)(6) aresevered and said to catch flight to atlanta well is in use but 1016 knows no particulars (b)(6) Well was dua about 36 skars ago. (b)(6) so too expensive. (b)(6) said the (b)(6) have municipal water and that their residence is the cutoff point for the company, (b)(6) name is company, the water tastes fine Nough inventory forms weregenerated on this reconnaissance gru diggins 000003 000008

Reference No. 19

NUS CORPORATION AND 3	TELECON NOTE	
CONTROL NO.	DATE: September 15, 1988	TIME: 1100
DISTRIBUTION:		
BETWEEN: Michael Sells	OF: City Water Department	PHONE: (803) 534-2821
AND: Teresa Sawyer of NUS Corp	poration	
DISCUSSION:		
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asked Mr. Sells how many conne	ctions the city water department had and	he answered 16,395.

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SEPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZAROUS CONDITIONS AND INCIDENTS

L. IDENTIFICATION

OI STATE OZ SITE NUMBER

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E HAZARDOUS CONDITIONS AND INCIDENTS			
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01 TE SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED	02 - OBSERVED (DATE	I POTENTIAL	I ALLEGED
01 T C CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED:	02 TOBSERVED (DATE) 04 NARRATIVE DESCRIPTION) _ POTENTIAL	= ALLEGED
01 T 0 FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED.	02 TOBSERVED (DATE) POTENTIAL	T ALLEGED
01 T. E. DIRECT CONTACT 03 POPULATION POTENTIALLY AFFECTED.	02 - OBSERVED (DATE) C POTENTIAL	I ALLEGED
01 T F CONTAMINATION OF SOIL 03 AREA POTENTIALLY AFFECTED: AGREE	02 _ OBSERVED (DATE) 04 NARRATIVE DESCRIPTION) _ POTENTIAL	_ ALLEGED
01 T. G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED:	02 I OBSERVED (DATE) 04 NARRATIVE DESCRIPTION] POTENTIAL	_ ALLEGED
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SEPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

L IDENTIFICATION

PART 3 - DESCRIPTION OF HA	ZARDOUS CONDITIONS AND INCIDENTS	30 D C	03342177
IL HAZARDOUS CONDITIONS AND INCIDENTS Compared			
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01 T.K. DAMAGE TO FAUNA 04 NARRATIVE DESCRIPTION (INClude name) of taggreg)	02 C OBSERVED DATE	C POTENTIAL	I ALLEGED
01 T. L. CONTAMINATION OF FOOD CHAIN 04 NARRATIVE DESCRIPTION	02 I OSSERVED (DATE)	C POTENTIAL	I ALLEGED
01 C M. UNSTABLE CONTAINMENT OF WASTES Solds Annet Stating to the Learny prints 03 POPULATION POTENTIALLY AFFECTED:	·	S POTENTIAL	= ALLEGED
01 IN DAMAGE TO OFFSITE PROPERTY 04 NAMATIVE DESCRIPTION	02 = OGGERVED (DATE)	I POTENTIAL	I ALLEGED
01 = 0 CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 04 NARRATIVE DESCRIPTION	02 C OBSERVED (DATE)	- POTENTIAL	I ALLEGED
01 = P ILLEGAL/UNAUTHORIZED DUMPING 04 NARRATIVE DESCRIPTION	OZ C OGGERVED (DATE)	- POTENTIAL	I ALLEGED
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLE	DED HAZAROS		
III. TOTAL POPULATION POTENTIALLY APPECTED: IV. COMMENTS			
V. SOURCES OF INFORMATION/Cor works resource . g. suse fine.	ISPAR BRIDGE (Species		

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V	ᅜᄼ

POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

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A DCCC MI	ft 8(mi)	ENDANGERED SPECIES.	
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∂EPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA					TIPICATION OF THE PLANTS	••	
H. DRINKING WATER	SUPPLY								
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V. SURFACE WATER				<u> </u>	<u> </u>	-			
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V. DEMOGRAPHIC AND	PROPERTY	INFORMATION							
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NO 07 PRINCING

NO OF PERSONS

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

*****MEMORANDUM*****

DATE: 07/21/88

Results of Cyanide Analysis; 88-373 CHAMPION INTERNATION SUBJECT:

OMANGEBURG SC CASE NO: 9702

FROM: Robert W. Knight

Chief, Laboratory Evaluation/Quality Assurance Section

TO: PHIL BLACKWELL

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

5.5 mg/kg Cyanide ~ 1 soil Clark a Cady J

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC PROJECT NO. 88-373 SAMPLE NO. 26448 SAMPLE TYPE: SOIL

SOURCE: CHAMPION INTERNATION ST: SC

STATION ID: SS-01 CASE.NO.: 9702 COLLECTION START: 06/02/88 STOP: 00/00/00

MD NO: J304 SAS NO.: D. NO.: * * **

RESULTS UNITS PARAMETER 0.510 MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC PROJECT NO. 88-373 SAMPLE NO. 26449 SAMPLE TYPE: SOIL

SOURCE: CHAMPION INTERNATION STATION ID: SB-01 CASE.NO.: 9702 SAS CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 D. NO.: MD NO: J306 SAS NO.:

RESULTS UNITS PARAMETER 0.580 MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26450 SAMPLE TYPE: SURFACEWA CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: CASE.NO.: 9702 SAS NO.: MD NO: J305

/88 STOP: 00/00/00

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RESULTS UNITS PARAMETER 0.01UJ MG/L CYANIDE

REMARKS HOLDING TIME EXCEEDED-CN ***REMARKS***

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26451 SAMPLE TYPE: SEDIM ** SOURCE: CHAMPION INTERNATION STATION ID: SD-01 CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 ** ** ** ** MD NO: J303 CASE.NO.: 9702 ** SAS NO.: D. NO.: **

RESULTS UNITS PARAMETER 0.63U MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26452 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH SOURCE: CHAMPION INTERNATION ST: SC

SOURCE: CHAMPION INTERNATION

STATION ID: SW-03 COLLECTION START: 06/02/88 STOP: 00/00/00 CASE.NO.: 9702 SAS NO.: D. NO.: MD NO: J308

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> RESULTS UNITS PARAMETER 0.01UJ MG/L CYANIDE

REMARKS HOLDING TIME EXCEEDED-CN ***REMARKS***

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

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PROJECT NO. 88-373 SAMPLE NO. 26453 SAMPLE TYPE: SEDIM PROG ELEM: NSF COLLECTED BY: A SPAUGH SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG

ST: SC STOP: 00/00/00 STATION ID: SD-03 COLLECTION START: 06/02/88 D. NO.: CASE.NO.: 9702 SAS NO.:

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> RESULTS UNITS PARAMETER 0.65U MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

SAS NO.:

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PROJECT NO. 88-373 SAMPLE NO. 26454 SAMPLE TYPE: SOIL ** SOURCE: CHAMPION INTERNATION STATION ID: CS-02 CASE.NO.: 9702 SAS **

PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 D. NO.: MD NO: J309

RESULTS UNITS PARAMETER 5.5 MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

PROJECT NO. 88-373 SAMPLE NO. 26455 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH ** ** SOURCE: CHAMPION INTERNATION STATION ID: SS-03 CASE.NO.: 9702 SAS CITY: ORANGEBURG ** ST: SC ** COLLECTION START: 06/02/88 STOP: 00/00/00 ** ** MD NO: J311 ** SAS NO.: D. NO.: * * ** **

RESULTS UNITS PARAMETER 0.510 MG/KG CYANIDE

FOOTNOTES

SPECIFIED ANALYSIS DATA REPORT

^{*}A AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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PROJECT NO. 88-373 SAMPLE NO. 26456 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC ** **

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SOURCE: CHAMPION INTERNATION STATION ID: SB-03 CASE.NO.: 9702 SAS CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 MD NO: J312 SAS NO.: D. NO.: **

RESULTS UNITS PARAMETER 0.560 MG/KG CYANIDE

FOOTNOTES

SPECIFIED ANALYSIS DATA REPORT

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^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 88-373 SAMPLE NO. 26457 SAMPLE TYPE: SURFACEWA SOURCE: CHAMPION INTERNATION STATION ID: SW-02 SAS NO.: PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 D. NO.: MD NO: J313 ** **

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> RESULTS UNITS PARAMETER O.OTUJ MG/L CYANIDE

REMARKS HOLDING TIME EXCEEDED-CN ***REMARKS***

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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07/20/88

SPECIFIED ANALYSIS DATA REPORT

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PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26458 SAMPLE TYPE: SEDIM

SOURCE: CHAMPION INTERNATION

CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 STATION ID: SD-02 CASE.NO.: 9702 MD NO: J310

** SAS NO.: D. NO.: ** ** * *

> RESULTS UNITS PARAMETER MG/KG CYANIDE 0.680

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

SPECIFIED ANALYSIS DATA REPORT PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00 D. NO.: PROJECT NO. 88-373 SAMPLE NO. 26459 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: SB-02 CASE.NO.: 9702 SAS NO.: ** ** ** ** ** * * * * ** ** * *

> RESULTS UNITS PARAMETER 0.54U MG/KG CYANIDE

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

07/20/88

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PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26464 SAMPLE TYPE: SOIL **

CITY: ORANGEBURG **

SOURCE: CHAMPION INTERNATION STATION ID: SS-04 CASE.NO.: 9702 SAS ST: SC STOP: 00/00/00 COLLECTION START: 06/02/88 ** MD NO: J315 ** SAS NO.: D. NO.:

** **

> RESULTS UNITS PARAMETER 0.530 MG/KG CYANIDE

FOOTNOTES

SPECIFIED ANALYSIS DATA REPORT

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

*****MEMORANDUM*****

DATE: 07/21/88

SUBJECT: Results of Metals Analysis;

88-373 GHAMPION INTERNATION

ORANGEBURG SC CASE NO: 9702

FROM: Robert W. Knight

Chief, Laboratory Evaluation/Quality Assurance Section

TO: PHIL BLACKWELL

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

Cci naindar Kuman

EPA-REGION IV ESD. ATHENS. GA. 07/20/88 METALS DATA REPORT

PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26448 SAMPLE TYPE: SOIL ** CITY: ORANGEBURG ST: SC SOURCE: CHAMPION INTERNATION * * STOP: 00/00/00 COLLECTION START: 06/02/88 STATION ID: SS-01 ** * * CASE NUMBER: 9702 SAS NUMBER: MD NUMBER: J304 ** ** * * ** MG/KG ANALYTICAL RESULTS MG/KG ANALYTICAL RESULTS 2700 **ALUMINUM** 43J MANGANESE 7. 2UR ANTIMONY 0.10 MERCURY 0.81JN ARSENIC 7Ü NICKEL 310U POTASSIUM 30 BARIUM 0.370 BERYLLIUM 0.61UR SELENIUM 0.630 CADMIUM 1.10 SILVER 720 CALCIUM 300 SODIUM 4.7 CHROMIUM 0.61UJ THALLIUM 2.70 COBALT NA TIN VANADIUM COPPER 1UJ IRON 20UJ ZINC 2700

01

PERCENT MOISTURE

REMARKS ***REMARKS***

FOOTNOTES

LEAD

MAGNESIUM

13J 120J

^{*}NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *A-AVERAGE VALUE

^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

07/20/88 METALS DATA REPORT

** S0 ** S1	ROJECT NO. 88-373 DURCE: CHAMPION I FATION ID: SB-01 ASE NUMBER: 9702	NTERNATION	 CITY: COLLE	ELEM: NSF COLLECTED BY: ORANGEBURG S1 CCTION START: 06/02/88 IUMBER: J306	A SPAUGH T: SC STOP: 00/00/00	**
*** * * * MG/ 13000 8.2UR 9.8JN 10 0.42U 0.72U 420 16 3.1U 1.1UJ 17000		ANALYTICAL RESULT	 * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * *	

14

PERCENT MOISTURE

REMARKS

6.5J 140J

LEAD

MAGNESIUM

REMARKS

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07/20/88

METALS DATA REPORT	EPA-REGION IV ESD, ATHENS, GA.	0//20/66
_ ***		* * * ***
** PROJECT NO. 88-373 SAMPLE NO. 26450 SAMPLE ** SOURCE: CHAMPION INTERNATION	E TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC	**
** STATION ID: SW-01	COLLECTION START: 06/02/88 STOP: 00/00/00	**
** CASE NUMBER: 9702 SAS NUMBER:	MD NUMBER: J305	** **
*** * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * ***
170UJ ALUMINUM	26 MANGANESE	
4OUJ ANTIMONY 3U ARSENIC	O.2U MERCURY 40U NICKEL	
30 BARIUM	2400 POTASSIUM	
2U BERYLLIUM 4U CADMIUM	3U SELENIUM 6U SILVER	
23000 CALCIUM	8900 SÕDIÜM	
90 CHROMIUM 200 COBALT	3U THALLIUM NA TIN	
5U COPPER	NA TIN 8U VANADTUM 2TNG	
1000J IRON 2U LEAD	30UJ ZINC	
1800 MAGNESIUM		

REMARKS

REMARKS

^{*}TOUNDITES***

*A-AVERAGE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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***	ATA REPORT * * * * * * * * JECT NO. 88-373 RCE: CHAMPION I TION ID: SD-01 E NUMBER: 9702	NTERNATION		CITY	G ELEM: NSF COLLECT Y: ORANGEBURG LECTION START: 06/02/ NUMBER: J303	* * * * * * * * * * * * * * * * * * *	00/00 **
*** * * MG/K 380 9UR 0.76UR 3.3U 1UJ 0.78U 170UJ 2.7 3.4U 11 460 1.6J 50U	* * * * * * * * * ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM CADMIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	

REMARKS

^{*}TOUTHOUS***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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07/20/88

METALS DATA REPORT	EPA-REGION IV ESD, ATRENS, GA.	07/20/66
*** * * * * * * * * * * * * * * * * *	CITY: ORANGEBURG ST: SC	00/00/00
UG/L ALUMINUM 40U ANTIMONY 3U ARSENIC 30 BARIUM 2U BERYLLIUM 4U CADMIUM 23000 CALCIUM 9U CHROMIUM 13U COBALT 5U COPPER 950J IRON 3UJ LEAD 2000 MAGNESIUM	UG/L ANALYTICAL RESULTS 26 MANGANESE 0.20 MERCURY 40U NICKEL 2700 POTASSIUM 3U SELENTUM 6U SILVER 8600 SODIUM 3U THALLIUM NA TIN 8U VANADTUM 20U ZINC	* * * * * * * * * * ***

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

07/20/88 EPA-REGION IV ESD. ATHENS. GA. METALS DATA REPORT

PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26453 SAMPLE TYPE: SEDIM ** * * CITY: ORANGEBURG SOURCE: CHAMPION INTERNATION ST: SC ** COLLECTION START: 06/02/88 STOP: 00/00/00 ** STATION ID: SD-03 ** SAS NUMBER: CASE NUMBER: 9702 MD NUMBER: J307 ** ** ** * *

ANALYTICAL RESULTS

MG/KG ANALYTICAL RESULTS MG/KG ALUMINUM MANGANESE 450 2UJ 9.3UR ANTIMONY 0.130 MERCURY 0.78UR ARSENIC 90 NICKEL 390U POTASSIUM 3.40 BARIUM BERYLLIUM 0.78UR SELENIUM 1UJ 0.810 CADMIUM 1.40 SILVER CALCIUM 30U SODIUM 130UJ 2.30 3.50 0.78UJ CHROMIUM THALLIUM COBALT NA TIN 1.90 VĀNADĪUM 1.20 COPPER IRON 20UJ ZINC 660 PERCENT MOISTURE 3J LEAD 23 50U MAGNESIUM

REMARKS ***REMARKS***

^{*}NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *NA-NOT ANALYZED *A-AVERAGE VALUE

^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

^{*}R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

07/20/88 METALS DATA REPORT

** PROJECT NO. 88-373 ** SOURCE: CHAMPION I ** STATION ID: CS-02 ** CASE NUMBER: 9702	INTERNATION	CITY: ORA	NGEBURG ST: SC N START: 06/02/88 STOP	* * * * * * * * * * * * * * * * * * *
	* * * * * * * * * * * * * * * * * * *	0.10 MER 70 NIC 3100 POT. 10J SEL 1.10 SIL 400J SOD 0.61UJ THA NA TIN 16 VAN 240J ZIN	ANALYTICAL RESULTS IGANESE CURY IKEL ASSIUM ENIUM IVER IUM ILL IADIUM	* * * * * * * * * * * * * * * * * * * *

REMARKS

FOOTNOTES

REMARKS

^{*}FOUTNUTES***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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07/20/88

METALS DATA REPORT	EPA-REGION IV ESD, ATHE	NS, GA.	07/20/88
*** * * * * * * * * * * * * * * * * * *	CITY: COLLE	ELEM: NSF COLLECTED BY: A SPAUGH ORANGEBURG ST: SC ICTION START: 06/02/88 STOP:	* * * * * * * * * * * * * * * * * * *
MG/KG ALUMINUM 7.3UR ANTIMONY 2.8JN ARSENIC 70 BARIUM 0.37U BERYLLIUM 1UJ CADMIUM 1100 CALCIUM 8.7 CHROMIUM 2.7U COBALT 2.3J COPPER 5400 IRON 14J LEAD 200 MAGNESIUM	* * * * * * * * * * * * * * * * * * *	ANALYTICAL RESULTS MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM THALLIUM TIN VANADIUM ZINC PERCENT MOISTURE	* * * * * * * * * * * * * * * * * * * *

REMARKS

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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07/20/88

METALS DATA REPORT	2	0.720,00
*** * * * * * * * * * * * * * * * * * *	TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC	00/00/00 **
MG/KG ALUMINUM 8UR ANTIMONY 1.6JN ARSENIC 9.6 BARIUM 0.4U BERYLLIUM 0.7U CADMIUM 210UJ CALCIUM 8.2 CHROMIUM 3U COBALT 1.1UJ COPPER 5500 IRON 3.7J LEAD 78 MAGNESIUM	MG/KG ANALYTICAL RESULTS 3UJ MANGANESE 0.11U MERCURY 7.8U NICKEL 340U POTASSIUM 0.67UR SELENIUM 1.2U SILVER 50UJ SODIUM 0.67UJ THALLIUM NA TIN 19 VANADIUM 6UJ ZINC 11 PERCENT MOISTURE	• • • • • • • • • • • • •

REMARKS

REMARKS

^{**}C-DUTINOTES***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

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*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

07/20/88 METALS DATA REPORT

**	PROJECT NO. 88-373 SAM	PLE NO. 26457	SAMPLE TYPE: SURFACEWA	PROG ELEM: NSF COLLECT	'ED BY: A SPAUGH	**
**	SOURCE: CHAMPION INTERNAT	ION		CITY: ORANGEBURG	ST: SC	**
**	STATION ID: SW-02			COLLECTION START: 06/02/	88 STOP: 00/00/00	**
**	CASE NUMBER: 9702	SAS NUMBER:		MD NUMBER: J313	, , ,	**
**						**

ANALYTICAL RESULTS UG/L ANALYTICAL RESULTS UG/L

5300	ALUMINUM	130	MANGANESE
40U	ANTIMONY	0.20	MERCURY
7JN	ARSENÍC	40U	NICKEL
190 20 40	BARIUM	96000	POTASSIUM
20	BERYLLIUM	30	SELENIUM
4 U	CADMIUM	6U	SILVER
30000	CALCIUM	440000	SODIUM
90	CHROMIUM	30	THALLIUM
140	COBALT	NA	TIN
5U	COPPER	22	VANADIUM
2900J	IRON	30UJ	ZINC
100	LEAD		

MAGNESIUM 3000

REMARKS ***REMARKS***

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EPA-REGION IV ESD, ATHENS, GA. 07/20/88
METALS DATA REPORT

* * ** *** * * * * * * * * * * * PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26458 SAMPLE TYPE: SEDIM * * SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG ST: SC * * ** COLLECTION START: 06/02/88 STOP: 00/00/00 STATION ID: SD-02 ** ** SAS NUMBER: CASE NUMBER: 9702 MD NUMBER: J310 ** ** ** **

ALUMINUM MANGANESE 820 10 9.7UR ANTIMONY 0.140 MERCURY 2UJ ARSENIC 9.50 NICKEL POTASSIUM 19 BARIUM 410U 0.82UR SELENIUM 0.490BERYLLIUM 1 U J CADMIUM 1.50 SILVER CALCIUM 350UJ 320UJ SODIUM 2.4U 3.7U CHROMIUM 0.82UJ THALLIUM COBALT NA TIN COPPER 3.7 VANADIUM 1.30 1200 IRON 20UJ ZINC 2.3J LEAD 27 PERCENT MOISTURE MAGNESIUM 64

REMARKS

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07/20/88 METALS DATA REPORT

** SOUR ** STAT	ECT NO. 88-373 CCE: CHAMPION I TON ID: SB-02 NUMBER: 9702	NTERNATION	26459 SAMPL	TYPE: SOIL	CITY: C COLLECT	EM: NSF CORANGEBURG TION START: BER: J314	OLLECTED BY: A S		* * * *** ** ** ** **
*** * * * * * * * * * * * * * * * * *		* * * * * * * * * * * * * * * * * * *			MG/KG 0.74UJ N 0.11U N 7.5U N 330U P 2UJ S 1.2U S 70UJ 0.65UJ T		* * * * * * * * * * ANALYTICAL RESUL	* * * * * * * * * * * * * * * * * * *	* * * ***

NA

16

08

7UJ

TIN

ZINC

VANADIUM

PERCENT MOISTURE

REMARKS

2.9U

6000

2.9J

40U

COBALT COPPER

MAGNESIUM

IRON

LEAD

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

EPA-REGION IV ESD. ATHENS. GA. 07/20/88 METALS DATA REPORT

PROJECT NO. 88-373 SAMPLE NO. 26464 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH * * ** SOURCE: CHAMPION INTERNATION STATION ID: SS-04 CASE NUMBER: 9702 CITY: ORANGEBURG COLLECTION START: 06/02/88 MD NUMBER: J315 ST: SC ** * * STOP: 00/00/00 ** ** SAS NUMBER: ** ***** * ** * *

ANALYTICAL RESULTS MG/KG MG/KG ANALYTICAL RESULTS

MANGANESE 3100 AL UMTNUM 140J ANTIMONY MERCURY 7.5UR 0.110 ARSENIC 3JN 23 NICKEL 320U 100 BARIUM POTASSIUM SELENTUM 1UJ BERYLLIUM 2UJ 0.660 CADMIUM 1.20 SILVER 1700 CALCIUM 60UJ SODIUM CHROMIUM 0.64UJ THALLIUM 78 4.5 COBALT ŇÁ TIN COPPER 8.5 VANADIUM 6.4J 4300 IRON 83J ZINC

PERCENT MOISTURE 29J LEAD 06 180 MAGNESIUM

REMARKS

REMARKS

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

*****MEMORANDUM*****

DATE: 07/13/88

SUBJECT: Results of Purgeable Organic Analysis;

88-373 CHAMPION INTERNATION

ORANGEBURG SC CASE NO: 9702

FROM: Robert W. Knight

Chief, Laboratory Evaluation/Quality Assurance Section

TO: PHIL BLACKWELL

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

PURG	EABLE	ORGANI	CS DATA	REPORT							-,						· · , · - , ·	_
*** ** ** **	PROJE SOURC	* * * CT NO. CE: CHA	* * * * 88-373	* * * *	E NO. 2		* * * * SAMPLE				PROG CITY:	* * * * * ELEM: NSF ORANGEBURG CTION START	COLLECTE	D BY: A S ST: SO	S PÁUGH C	0/00/00	*	:
**			9702 * * * *	* * * * ANALYTIO			SAS * * * *	NO.:	* * *	* *	D. N * * * * UG/KG	0.: J409 * * * * *	* * * * * * ANALY	* * * * ICAL RES	* * * * ULTS	* * * * :	-	* *
	100 100 100 100 100 100 50 50 50 50 50 50 50 50 50 50 50 50 5	BROMON VINYL CHLORC METHYL ACETON CARBON 1,1-DI 1,2-DI CHLORD METHYL 1,1-1- CARBON VINYL BROMOL	I DISULF CHLOROE CHLOROE CHLOROE FORM CHLOROE - ETHYL TETRAC ACETATE	ORIDE IDE ITHENE (1,1 ITHANE ITHENE (TO ITHANE KETONE OROETHANE HLORIDE		OROETH	YLENE)			NA	5UJ 5U 5U 5U 5U	METHYL ISO METHYL BUT	THENE (TRI OROMETHAN HLOROETHAN DICHLOROF HYLVINYL BUTYL KET YL KETONI OETHENE (TRACHLORO ENE ENE NES	CCHLOROE H NE NE PROPENE ETHER CONE ETRACHLOI		JE)		

REMARKS

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PURGEABLE ORGANICS DATA REPORT		. 200,	01,12,00
*** * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	PROG ELEM: NSF COLLECTED BY: A SPA CITY: ORANGEBURG ST: SC	TOP: 00/00/00 **
** CASE NO.: 9702	SAS NO.: * * * * * * * * * * * * * * * * * * *	D. NO.: J411 * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * *
12UJ CHLOROMETHANE 12U BROMOMETHANE 12U VINYL CHLORIDE 12U CHLORUETHANE 2OUJ METHYLENE CHLORIDE 2OUJ ACETONE 6U CARBON DISULFIDE 6U 1,1-DICHLOROETHANE 6U 1,2-DICHLOROETHANE 6U 1,2-DICHLOROETHANE 12UR METHYL ETHYL KETONE 6U 1,1-TRICHLOROETHANE 12UR METHYL ETHYL KETONE 6U 1,1-TRICHLOROETHANE 6U 1,1-TRICHLOROETHANE 6U 1,1-TRICHLOROETHANE 6U VINYL ACETATE 6UJ BROMODICHLOROMETHANE 6U 1,2-DICHLOROPROPANE		GUJ CIS-1,3-DICHLOROPROPENE GUJ TRICHLOROETHENE(TRICHLOROETHYL GU DIBROMOCHLOROMETHANE GU 1,2-TRICHLOROETHANE GU BENZENE GUJ TRANS-1,3-DICHLOROPROPENE 2-CHLOROETHYLVINYL ETHER GUJ METHYL ISOBUTYL KETONE 12UJ METHYL BUTYL KETONE GUJ TETRACHLOROETHENE(TETRACHLOROE GUJ TOLUENE GU CHLOROBENZENE GU CHLOROBENZENE GU STYRENE GU TOTAL XYLENES 15 PERCENT MOISTURE	

REMARKS

FOOTNOTES

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PURGEABLE OF	RGANICS DATA REPORT		· · · · · · · · · · · · · · · · · · ·			= 1, 1 =, ==
** PROJECT ** SOURCE	T NO. 88-373 SAMPLE NO. 88-373 SAMPLE NO. CHAMPION INTERNATION N ID: SW-01	* * * * * * * * * * * * * * * * * * *	SURFACEWA !	* * * * * * * * * * * * * * * * * * *	COLLECTED BY: A SPAUC ST: SC	* * * * * * * * * * * * * * * * * * *
	O.: 9702 * * * * * * * * * * * * * ANALYTICAL			D. NO.: J410 * * * * * * * * * G/L	* * * * * * * * * * * * * * * * * * *	**
10U Bi 10U V 10U V 20UJ A 5U C 5U 1 5U 1 5U 1 5U 1 5U 1 5U 1 5U 1 5U 1	HLOROMETHANE ROMOMETHANE INYL CHLORIDE HLOROETHANE ETHYLENE CHLORIDE CETONE ARBON DISULFIDE ,1-DICHLOROETHANE ,2-DICHLOROETHANE ,2-DICHLOROETHANE ETHYL ETHYL KETONE ,1-TRICHLOROETHANE ARBON TETRACHLORIDE INYL ACETATE ROMODICHLOROMETHANE ,2-DICHLOROMETHANE ,2-DICHLOROETHANE ,1-TRICHLOROETHANE ,2-DICHLOROMETHANE ,2-DICHLOROMETHANE ,2-DICHLOROMETHANE		NA	5U DIBROMOCHLO 5U 1,1,2-TRICH 5UJ BÉNZENE 5U TRANS-1,3-D 2-CHLORÓETH 5U BROMOFORM 10U METHYL BUTY 5U TETRACHLORO	HENE(TRICHLORGETHYLEN ROMETHANE LOROETHANE ICHLOROPROPENE YLVINYL ETHER UTYL KETONE L KETONE ETHENE(TETRACHLOROETH RACHLOROETHANE NE	

REMARKS

FOOTNOTES

*HO-DUTION TO SEE THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REALACTION.

***	,
** SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG ST: SC ** STATION ID: SD-01 COLLECTION START: 06/02/88 STOP: 00/00/00 ** ** CASE NO.: 9702 SAS NO.: D. NO.: J408 *** * * * * * * * * * * * * * * * * *	***
** STATION ID: SD-01 COLLECTION START: 06/02/88 STOP: 00/00/00 ** ** CASE NO.: 9702 SAS NO.: D. NO.: J408 *** ** * * * * * * * * * * * * * * *	**
**	**
** CASE NO.: 9702 SAS NO.: D. NO.: J408 *** * * * * * * * * * * * * * * * * *	* *
	**
	**

OUT TO THE RESULTS	
12UJ CHLOROMETHANE 6UJ CIS-1,3-DICHLOROPROPENE	
12U BROMOMETHANE 6UJ TRICHLORGETHENE(TRICHLORGETHYLENE)	
12U VINYL CHLORIDE 6U DIBROMOCHLOROMETHANE	
12U CHLOROE THANE 6U 1.1.2-TRICHLOROE THANE	
20UJ METHYLENE CHLORIDE 60 BÉNZENE	
30UJ ACETONE 6UJ TRANS-1,3-DICHLOROPROPENE	
6Ú CÁRBON DISULFIDE NA 2-CHĽORÓĒTHÝĽVÍNYL ETHĒR	
6U 1,1~DICHLOROETHENE(1,1~DICHLOROETHYLENE) 6UJ BROMOFORM	
6U 1,1-DICHLOROETHANE 12U METHYL ISOBUTYL KETONE	
6U 1,2-DICHLOROETHENE (TOTAL) 12UJ METHYL BUTYL KETONE	
6U CHLOROFORM 6UJ TETRACHLOROETHENE(TETRACHLOROETHYLENE)	
6U 1,1,2,2-TETRACHLOROETHANE	
12UR MÉTHYL ETHYL KETONE 6U TÖLÜENE	
6U 1,1,1-TRICHLOROETHANE 6U CHLOROBENZENE	
6U CARBON TETRACHLORIDE 6U ETHYL BENZENE 12U VINYL ACETATE 6U STYRENE	
12U VINYL ACETATE 6U STYRENE 6UJ BROMODICHLOROMETHANE 6U TOTAL XYLENES	
6U 1.2-DICHLOROPROPANE 18 PERCENT MOISTURE	

REMARKS

FOOTNOTES

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PURC	GEABLE	ORGANICS DATA	REPORT				200,	,					٥,	,,
***	* * *	* * * * * * *	* * * * *		* * * * *				* * * * :		* * * * * *			* ***
**		CT NO. 88-373		N O. 26415 S	SAMPLE TYPE	: SURFACE					BY: A SPAL	JGH		**
**		CE: CHAMPION I	NTERNATION						ANGEBURG		ST: SC		100	**
**	SIAL	ION ID: SW-03					CC	LLECTIC	JN START	: 06/02/88	5	TOP: 00/00	/00	**
**	CASE	NO.: 9702			SAS NO.:		r	. NO.:	.1413					**
***	* * *	* * * * * * *	* * * * * *		* * * * *	* * * * *	* * *	* * * 1	* * * * :	* * * * *	* * * * * :		* * * * *	* ***
	UG/L		ANALYTICAL	RESULTS			UG/	L		ANALYTI	CAL RESULTS	5		
		CHLOROMETHANE								CHLOROPROP		-NE V		
	100 100	BROMOMETHANE VINYL CHLORID	F							OROMETHANE	HI.OROETHYL1	INE)		
	100	CHLOROETHANE	L							HLORUETHAN				
		METHYLENE CHL	ORIDE				5		NŹĔŊĖ	neonoe man	•			
		ACETONE						50 TRA	ANS-1,3-	DICHLOROPR				
	50	CARBON DISULF					NA			HYLVINYL E	THER			
	_50	1,1-DICHLOROE	THENE(1,1-D	ICHLOROETHYL	LENE)				OMOFORM					
		1,1-DICHLOROE								BUTYL KETO	NE			
	5U	1,2-DICHLOROE CHLOROFORM	THENE (TOTAL	L)			,			YL KETONE	TRACHLOROE	THVI FNE)		
	50 50	1.2-DICHLOROE	THANE							TRACHLOROE		IIII LLNL /		
	10ŬŘ	MÉTHYL ETHYL					2		ÚĔŃĒ	· · · · · · · · · · · · · · · · · · ·				
		1.1.1-TRICHLO					_	50 CHL	OROBENZ	ENE				
	5U	CÁRBON TETRAC							HYL BENZ	ENE				
	100	VINYL ACETATE							YRENE					
	<u>5</u> U	BROMODICHLORO						50 TO	TAL XYLE	NES				
	50	1,2-DICHLOROP	KUPANE											

REMARKS

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PURGEABLE ORGANICS DATA	A REPORT		37, 12, 33
*** * * * * * * * * * * * * * * * * *			ST: SC **
** CASE NO.: 9702	SAS NO.:	D. NO.: J412	**
*** * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *		* * * * * * * * * * * * * * * * * * *
6U 1,1-DICHLORO	DE LORIDE FIDE ETHENE(1,1-DICHLOROETHYLENE) ETHANE ETHENE (TOTAL) ETHANE KETONE OROETHANE CHANE CHANE CHANE CHORIDE CHANE CHORIDE CHANE CHORIDE CHANE CHORIDE CHORIDE CHORIDE CHORIDE CHORIDE	GUJ CIS-1,3-DICHLOROPROPI GUJ TRICHLOROETHENE(TRICH GU DIBROMOCHLOROMETHANE GU BENZENE GUJ TRANS-1,3-DICHLOROPROPI NA 2-CHLOROETHYLVINYL E GUJ BROMOFORM 13UJ METHYL ISOBUTYL KETONE GUJ TETRACHLOROETHENE(TE GUJ TETRACHLOROETHENE(TE GUJ TOLUENE GU CHLOROBENZENE GU CHLOROBENZENE GU STYRENE GU TOTAL XYLENES 22 PERCENT MOISTURE	HLOROETHYLENE) E OPENE THER NE TRACHLOROETHYLENE)

REMARKS

FOOTNOTES

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PURGEABLE ORGANICS DATA	REPORT	11 202, 11112110,		0.1, 12, 00
*** * * * * * * * * * * * * * * * * *	SAMPLE NO. 26417 SAMPLE TYPE: SOIL	PROG ELEM CITY: ORA		
	SAS NO.:	D. NO.:	J414	**
*** * * * * * * * * * * * * * * * * *	ANALYTICAL RESULTS	* * * * * * * * * * * * * * * * * * *	ANALYTICAL RESULT	·
11U 1,1-DICHLOROE	DE LORIDE FIDE ETHENE(1,1-DICHLOROETHYLENE) ETHANE ETHANE ETHANE KETONE DROETHANE CHLORIDE METHANE CHLORIDE METHANE	110 TRI 110 DIB 110 11 110 11 110 EAN 110 TRA 2-C 220 MET 220 MET 110 TET 110 TOL 110 CHL 110 ETH 110 ETH	OROBENZENE IYL BENZENE	

REMARKS

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07/12/88 PURGEARIE ORGANICS DATA REPORT

	SEADLE	ORGANICS D	AIA KEPU	<u> </u>											
*** ** ** **	SOUR	ECT NO. 88- CE: CHAMPIO ION ID: SS-	N INTERN		0. 26418	SAMPLE	TYPE: S	SOIL	* * '	CITY:	ELEM: NSF ORANGEBU CTION STA		D BY: A SPAUG ST: SC ST: ST	GH OP: 00/00/00	* * * * * * * * * * * * * * * * * * * *
**	CASE	NO.: 9702				SAS N	0. :			D. N	0 : J416				**
***	* * * UG/KG	* * * * *	* * * *	* * * * YTICAL	RESULTS	* * * *	* * * *	* * *	* * :	* * * * UG/KG	* * * *	* * * * * * ANALYT	ICAL RESULTS	* * * * * *	* * * * ***
	100 100 100 100	CHLOROMETHA VINYL CHLOROMETHA VINYL CHLOC CHLOROMETHA ACETONE CARBON DISTIPLICATION OF CHLOROFORM 1,2-DICHLO CHLOROFORM 1,1-1-TRIC CARBON TET VINYL ACET BROMODICHLOLOCHLOROFORM 1,2-DICHLOC CHLOROMETHYL ETH 1,1-TRIC CARBON TET VINYL ACET BROMODICHLOLOCAL COMMETHICAL CARBON TET VINYL ACET BROMODICHLOLOCAL CHLOROMETHICAL CARBON TET VINYL ACET BROMODICHLOLOCAL CHLOROMETHICAL CARBON TET	NE RIDE NE CHLORIDE ULFIDE ROETHENE ROETHENE ROETHENE PL KETON HLOROETH RACHLORI ATE OROMETHA	(TOTAL E ANE DE NE		HYLENE)			NA	50 50 50 50 50	TRICHLOR TRICHLOR TRICHLOR TRANS-1, 2-CHLORO BROMOFOR METHYL B TETRACL TOLUENE CHLOROBE ETHYL BE TOTAL XY	HLOROMETHAN ICHLOROETHA 3-DICHLOROP ETHYLVINYL M SOBUTYL KET UTYL KETONE OROETHENE(1) TETRACHLORO NZENE NZENE	CHLOROETHYLEI IE INE ROPENE ETHER ONE ETRACHLOROETI		

REMARKS ***REMARKS***

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*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

PUR	GEABLE	ORGANICS DATA	REPORT		EIA KEGI	ON IN ESE	, niii	143, UA.				07/12/00
***	* * *	* * * * * * *	* * * * * *	* * * * * * *	* * * * * *	* * * * *	* * * *	* * * * * *		* * * * * * *		* * * * ***
**		ECT NO. 88-373). 26419 SAMPL	.E TYPE: SO	IL				BY: A SPAUGH		**
**		CE: CHAMPION I	NTERNATION					ORANGEBURG		ST: SC		**
* *	STAT	ION ID: SB-03					COLLE	CTION START	: 06/02/88	STOP:	00/00/00	**
* *												**
**	CASE	NO.: 9702		SAS	NO.;		D. N * * *	O.: J417				**
* * *	# # # UC/KC	* * * * * * *			* * * * *	* * * * :		* * * * * *	* * * * * *	A F F A F F		* * * * ***
	UG/KG		ANALYTICAL R	E30L13			UG/KG		ANALYTIC	AL RESULTS		
	110	CHLOROMETHANE					ВU	CIS-1.3-DI	CHI ORODRODE	NF		
	110	BROMOMETHANE					δÙ			LOROETHYLENE)		
	iiŭ	VINYL CHLORID	Ē				6Ŭ	DIBROMOCHL				
	110	CHLOROE THANE	=				6Ŭ	1.1.2-TRIC				
	60U	METHYLENE CHL	ORIDE				6υ	BENZENE				
	20UJ	ACETONE					6 0		DICHLOROPRO			
	6U	CARBON DISULF				NA			HYLVINYL ET	HER		
	6 U	1,1-DICHLOROE		CHLOROETHYLENE)		, 6U	BROMOFORM		_		
	60	1,1-DICHLOROE	HANE				110		BUTYL KETON	t		
	6U	1,2-DICHLOROE	IHENE (IUIAL)	İ			110	METHYL BUT		DACIN ODOETINA	THE Y	
	6U 6U	CHLOROFORM 1,2-DICHLOROE	THANE				60 60		TRACHLOROET	RACHLOROETHYL	ENC)	
	11UR	METHYL ETHYL					6Ú	TOLUENE	INACHLORUE	MANL		
	6Û	1,1,1-TRICHLO					6Ŭ	CHLOROBENZ	FNF			
	6Ŭ	CÁRBON TETRAC	HIORIDE				6Ŭ	ETHYL BENZ				
	110	VINYL ACETATE					6ŭ	STYRENE	-11-			
	ĠŬ	BROMODICHLORO	MÉTHANE				6Ŭ	TOTAL XYLE	NES			
	6Ŭ	1,2-DICHLOROP					11	PERCENT MO				

REMARKS

^{*}FOULNOISS***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

PURGEABLE ORGANIC	S DATA REPORT			0.7.2,00
*** * * * * * * * * * * * * * * * * *	88-373 SAMPLE NO. 26420 S PION INTERNATION	: * * * * * * * * * * * * * * * * * * *	PROG ELEM: NSF COLLECTED BY: A SP CITY: ORANGEBURG ST: SC	
** CASE NO.: 9	702	SAS NO.:	D. NO.: J418	**
*** * * * * * * * * * UG/L	ANALYTICAL RESULTS	*******	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *
20UJ ACETONE 5U CARBON 5U 1.1-DIC 5UJ 1.2-DIC 5U 1.2-DIC 5U 1.2-DIC 10UR MÉTHYL 5U 1.1.1-T 5U CARBON 10U VINYL A 5U BROMODI	THANE HLORIDE THANE NE CHLORIDE DISULFIDE HLOROETHENE(1,1-DICHLOROETHYL HLOROETHANE HLOROETHENE (TOTAL) ORM HLOROETHANE ETHYL KETONE RICHLOROETHANE TETRACHLORIDE	N/	SU CIS-1,3-DICHLOROPROPENE SU TRICHLOROETHENE(TRICHLOROETHY SU DIBROMOCHLOROMETHANE SU 1,1,2-TRICHLOROETHANE SU BENZENE SU TRANS-1,3-DICHLOROPROPENE 2-CHLOROETHYLVINYL ETHER SU BROMOFORM 10U METHYL ISOBUTYL KETONE 10U METHYL BUTYL KETONE SU TETRACHLOROETHENE(TETRACHLOROETHENE) SU TOLUENE SU CHLOROBENZENE SU ETHYL BENZENE SU STYRENE SU TOTAL XYLENES	

REMARKS

FOOTNOTES

*A-AVERAGE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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PURGEABLE ORGANICS DATA F	REPORT		01, 12,00
*** * * * * * * * * * * *	: * * * * * * * * * * * * * * * * * * *	CITY: ORANGEBURG ST: SC	** : 00/00/00 **
** CASE NO.: 9702	SAS NO.; * * * * * * * * * * * * * * * * * * *	D. NO.: J415 * * * * * * * * * * * * * * * * * * *	**
12UJ CHLOROMETHANE 12U BROMOMETHANE 12U VINYL CHLORIDE 12U CHLOROEIHANE 20UJ METHYLENE CHLOF 40UJ ACETONE 6U CARBON DISULFIT 6U 1,1-DICHLOROETH 6U 1,2-DICHLOROETH 6U 1,2-DICHLOROETH 6U 1,2-DICHLOROETH 12UR METHYL ETHYL KI 6U 1,1-TRICHLOROETH 6U CARBON TETRACHI 12U VINYL ACETATE 6UJ BROMODICHLOROMI	DE HENE(1,1-DICHLOROETHYLENE) HANE HENE (TOTAL) HANE ETONE DETHANE LORIDE ETHANE	6UJ CIS-1,3-DICHLOROPROPENE 6UJ TRICHLOROETHENE(TRICHLOROETHYLENE 6U DIBROMOCHLOROMETHANE 6U 1,1,2-TRICHLOROETHANE 6UJ TRANS-1,3-DICHLOROPROPENE 6UJ TRANS-1,3-DICHLOROPROPENE NA 2-CHLOROETHYLVINYL ETHER 6UJ BROMOFORM 12U METHYL ISOBUTYL KETONE 12UJ METHYL BUTYL KETONE 6UJ TETRACHLOROETHENE(TETRACHLOROETHY 6U 1,1,2,2-TETRACHLOROETHANE 2OU TOLÜENE 6U CHLOROBENZENE 6U STYRENE 6U STYRENE 6U TOTAL XYLENES 19 PERCENT MOISTURE	

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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PURGEABLE	ORGANICS DATA	REPORT			,		,			01,12,00
** SOUR	E * * * * * * * * * * * * * * * * * * *		* * * * * * * * *). 26422 SAMPLE			PROG E	* * * * * * ELEM: NSF C ORANGEBURG CTION START:	ST	A SPAUGH : SC STOP: 00/	* * * * * * * * * * * * * * * * * * *
** CASE	E NO.: 9702 * * * * * * * 3	* * * * * * ANALYTICAL F	SAS N * * * * * * * RESULTS	NO.: *****		D. NO * * * IG/KG).: J419 * * * * * *	* * * * * * ANALYTICAL	* * * * * * * RESULTS	** * * * * * ***
110 110 110 200 3000 50 50 50 50 110R 50 110 50 50	BROMOMETHANE VINYL CHLORIC CHLOROETHANE METHYLENE CHL ACETONE CARBON DISULE 1,1-DICHLOROE 1,2-DICHLOROE CHLOROFORM 1,2-DICHLOROE METHYL ETHYL 1,1,1-TRICHLOC CARBON TETRAC VINYL ACETATE	ORIDE ORIDE THENE(1,1-DIO THANE THENE (TOTAL) THANE KETONE BROETHANE HLORIDE	CHLOROETHYLENE)		NA	50 50 50 50 50 50 110	CIS-1,3-DICH TRICHLOROETH DIBROMOCHLOR 1,1,2-TRICHL BÉNZENE TRANS-1,3-DI 2-CHLOROETHY BROMOFORM METHYL BUTYL TETRACHLOROE 1,1,2,2-TETR TOLUENE CHLOROBENZEN ETHYL BENZEN STYRENE TOTAL XYLENE PERCENT MOIS	IENE(TRICHLOR COMBETHANE COROETHANE CHLOROPROPEN LVINYL ETHER TYL KETONE KETONE THENE(TETRAC ACHLOROETHAN IE	EHLOROETHYLENE)

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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DIIR	SEARLE ORG	ANICS DATA	REPORT		LIA ILLUIO		, ~	110, GA.				07/12/00
***	* * * *	* * * * *	* * * * * *	* * * * * * *	* * * * * *	* * * *	* * *	* * * * *		* * * * * * *	* * * * *	* * * ***
**	PROJECT	NO. 88-373	SAMPLE NO	. 26424 SAMP	LE TYPE SED	IM	PROG	ELEM: NSF	COLLECTED	BY: A SPAUGH		**
**			NTERNATION				CITY	ORANGEBURG		ST: SC		**
**	STATION	ID SD-05	REGION IV OC	RI ANK			COLLE	CTION START	: 06/02/88		00/00/00	**
**	01/11/2011	.b. 05 00		G					. 55, 52, 55	3.3	,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	**
**	CASE NO.	9702		SA	S NO.:		D. N	O.: J426				**
***	* * * * *	* * * * *	* * * * * *	* * * * * * *	* * * * * *	* * * *	* * *	* * * * *	* * * * *	* * * * * * *	* * * * *	* * * ***
	UG/KG		ANALYTICAL R	FSULTS			UG/KG		ANAL YTIC	AL RESULTS		
	.						-,					
	120 CHL	OROMETHANE					6U	CIS-1.3-DI	CHLOROPROPE	NE		
		MOMETHANE					ĠÙ			LOROETHYLENE)		
		IYL CHLORID	Ε				6Ŭ	DIBROMOCHL				
		OROE THANE	_				6Ŭ		HLOROETHANE			
		HYLENE CHL	ORIDE				6Ū	BÉNZENE				
		TONE					ดีบั		DICHLOROPRO	PENE		
		BON DISULF	IDF			NA			HYLVINYL ET			
	60 1.1			HLOROETHYLENE)	• • • •	6ม	BROMOFORM		- · - · · ·		
		-DICHLOROE			•		120		BUTYL KETON	E		
	6Ŭ 1,2		THENE (TOTAL)				120	METHYL BUT		_		
	6Ŭ ĆĤĹ	OROFORM					6Ü			RACHLOROETHYLE	NE)	
	6Ŭ 1,2	-DICHLOROE	THANE				6Ŭ		TRACHLOROET			
	120 MÉT	HYL ETHYL	KETONE				21	TÓLÚENE		=		
		1.1-TRICHLO					6Ú	CHLOROBENZ	ENF			
		REON TETRAC					6Ŭ	ETHYL BENZ				
		NYL ACETATE					6Ŭ	STYRENE	-			
		MODICHLORO					ĞŬ	TOTAL XYLE	NES			
		2-DICHLOROP					15	PERCENT MO				

REMARKS

FOOTNOTES

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PURGEABLE ORGANICS DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26427 SAMPLE TYPE: SOIL
                                                           PROG ELEM: NSF COLLECTED BY: A SPAUGH
**
                                                                                                              * *
                                                           CITY: ORANGEBURG ST: SC
COLLECTION START: 06/02/88 STOP: 00/00/00
    SOURCE: CHAMPION INTERNATION
                                                                                                              **
* *
    STATION ID: SS-04
* *
                                                                                                              **
                                        SAS NO.:
                                                            D. NO.: J420
* *
    CASE NO.: 9702
                                                                                                              * *
ANALYTICAL RESULTS
                                                           UG/KG
   UG/KG
                                                                            ANALYTICAL RESULTS
                                                             5U CIS-1,3-DICHLOROPROPENE
5U TRICHLOROETHENE(TRICHLOROETHYLENE)
    100 CHLOROMETHANE
    10U BROMOMETHANE
    100 VINYL CHLORIDE
                                                             5U DIBROMOCHLOROMETHANE
    100 CHLORGETHANE
                                                                 1,1,2-TRICHLOROETHANE
    200 METHYLENE CHLORIDE
                                                                 BÉNZENE
                                                                 TRANS-1.3-DICHLOROPROPENE
   30UJ ACETONE
        CARBON DISULFIDE
                                                        NA
                                                                 2-CHLORÓETHYLVINYL ETHER
     5U
        1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
                                                             5U
                                                                 BROMOFORM
       1,1-DICHLOROETHANE
1,2-DICHLOROETHENE (TOTAL)
     50
                                                             100
                                                                 METHYL ISOBUTYL KETONE METHYL BUTYL KETONE
     5U
                                                             100
        CHLOROFORM
                                                                 TETRACHLOROETHENE(TETRACHLOROETHYLENE)
                                                              5U
     5U 1.2-DICHLOROETHANE
                                                             50
                                                                 1,1,2,2-TETRACHLOROETHANE
   10UR MÉTHYL ETHYL KETONE
                                                             200
                                                                TOLUENE
     50 1 1.1-TRICHLOROETHANE
                                                              50
                                                                CHLOROBENZENE
     5U CÁRBON TETRACHLORIDE
                                                              5U
                                                                ETHYL BENZENE
    10U VINYL ACETATE
                                                                 STYRENE
     5U BROMODICHLOROMETHANE
                                                                 TOTAL XYLENES
     5U 1,2-DICHLOROPROPANE
                                                                 PERCENT MOISTURE
```

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

*****MEMORANDUM*****

DATE: 07/13/88

SUBJECT: Results of Extractable Organic Analysis;

88-373 CHAMPION INTERNATION

ORANGEBURG SC CASE NO: 9702

FROM: Robert W. Knight

Chief, Laboratory Evaluation/Quality Assurance Section

TO: PHIL BLACKWELL

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

CC: naindan Kumar

ATTACHMENT

petroleum products

```
EXTRACTABLE ORGANICS DATA REPORT
*** PROJECT NO. 88-373 SAMPLE NO. 26411 SAMPLE TYPE: SOIL

*** SOURCE: CHAMPION INTERNATION

*** STATION ID: SS-01

*** STATION ID: SS-01
                                                                                                                                        **
** CASE NO.: 9702
                                        SAS NO.:
                                                                         D. NO.: J409
                                                                                                                                       * *
UG/KG
                 ANALYTICAL RESULTS
                                                                        UG/KG ANALYTICAL RESULTS
    340U PHENOL
                                                                        1600U 3-NITROANILINE
    340U BIS(2-CHLOROETHYL) ETHER
340U 2-CHLOROPHENOL
                                                                         340U ACENAPHTHENE
                                                                        1600UJ 2,4-DINITROPHENOL
    340U 1,3-DICHLOROBENZENE
340U 1,4-DICHLOROBENZENE
                                                                        1600UJ 4-NITROPHENOL
                                                                         340U DIBENZOFURAN
    340U BÉNZYL ALCOHOL
                                                                         340U 2.4-DINITROTOLUENE
340U DIETHYL PHTHALATE
    340U 1,2-DICHLOROBENZENE
    340U 2-METHYLPHENOL
                                                                          340U 4-CHLOROPHENYL PHENYL ETHER
    340U BIS(2-CHLOROISOPROPYL) ETHER
                                                                         340U FLUORENE
    340U (3-AND/OR 4-)METHYLPHENOL
                                                                         1600U 4-NITROANILINE
    340U N-NITROSODI-N-PROPYLAMINE
                                                                         1600U 2-METHYL-4,6-DINITROPHENOL
    340U HEXACHLOROETHANE
340U NITROBENZENE
340U ISOPHORONE
                                                                         3400 N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
                                                                         340U 4-BROMOPHENYL PHENYL ETHER
                                                                         340U HEXACHLOROBENZENE (HCB)
    340U 2-NITROPHENOL
                                                                         1600U PENTACHLOROPHENOL
    340U 2,4-DIMETHYLPHENOL
                                                                         340U PHENANTHRENE
  1600UJ BÉNZOIC ACID
                                                                          340U ANTHRACENE
    3400 BIS(2-CHLOROETHOXY) METHANE
                                                                          340U DI-N-BUTYLPHTHALATE
    340U 2,4-DICHLOROPHENOL
340U 1,2,4-TRICHLOROBENZENE
                                                                          3400 FLUORANTHENE
                                                                          340U PYRENE
   340U NAPHTHALENE
340UJ 4-CHLOROANILINE
340UJ HEXACHLOROBUTADIENE
                                                                         3400 BENZYL BUTYL PHTHALATE
                                                                         6700 3,3'-DICHLOROBENZIDINE
                                                                         340U
                                                                                BÉNZO(A)ANTHRACENE
    340U 4-CHLORO-3-METHYLPHENOL
                                                                          340U
                                                                               CHRYSENE
    340U 2-METHYLNAPHTHALENE
                                                                               BIS(2-ETHYLHEXYL) PHTHALATE
DI-N-OCTYLPHTHALATE
                                                                          340U
   340UJ HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                          340U
   340U 2,4,5-TRICHLOROPHENOL
340U 2-4,5-TRICHLOROPHENOL
340U 2-CHLORONAPHTHALENE
1600U 2-NITROANILINE
                                                                                BENZO(B AND/OR K) FLUORANTHENE
                                                                          340U
                                                                          340U
                                                                                BENZO-A-PYRENE
                                                                         340U INDENO (1,2,3-CD) PYRENE
340U DIBENZO(A,H)ANTHRACENE
    340U DIMETHYL PHTHALATE
                                                                         3400 BENZO(GHI)PERYLENE
    340U ACENAPHTHYLENE
                                                                            2 PERCENT MOISTURE
    340U 2.6-DINITROTOLUENE
```

REMARKS

^{*}POUNDIES***

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EXTRACTABLE ORGANICS DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH ST: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00
** PROJECT NO. 88-373 SAMPLE NO. 26412 SAMPLE TYPE: SOIL
    SOURCE: CHAMPION INTERNATION
* *
    STATION ID: SB-01
**
                                                                                                                        **
** CASE NO.: 9702
                                            SAS NO.:
                                                                 D. NO.: J411
                                                                                                                        * *
ANALYTICAL RESULTS
   UG/KG
                                                                UG/KG ANALYTICAL RESULTS
    390U PHENOL
                                                                1900U 3-NITROANILINE
    390U BIS(2-CHLOROETHYL) ETHER
                                                                 390U ACENAPHTHENE
    390ŭ
         2-CHLOROPHENOL
                                                               1900UJ
                                                                      2,4-DINITROPHENOL
    390Ú
         1.3-DICHLOROBENZENE
                                                               1900UJ 4-NITROPHENOL
    390U 1,4-DICHLOROBENZENE
                                                                 390U DIBENZOFURAN
                                                                3900 2.4-DINITRUIDLOLINE
3900 DIETHYL PHTHALATE
3900 4-CHLOROPHENYL PHENYL ETHER
    3900 BÉNZYL ALCOHOL
    390U 1,2-DICHLOROBENZENE
    3900 2-METHYLPHENOL
   390U BIS(2-CHLOROISOPROPYL) ETHER
    390U
         (3-AND/OR 4-)METHYLPHENOL
                                                                19000
                                                                      4-NITROANILINE
   390U
         N-NITROSODI-N-PROPYLAMINE
                                                                19000
                                                                      2-METHYL-4.6-DINITROPHENOL
   390U
         HEXACHLOROETHANE
                                                                      N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
                                                                 390U
   390U
         NITROBÊNZENE
                                                                      4-BROMOPHENYL PHENYL ETHER
                                                                 390U
    390U
         ISOPHORONE
                                                                 390U HEXACHLOROBENZENE (HCB)
   390U
         2-NITROPHENOL
                                                                19000
                                                                      PENTACHLOROPHENOL
    390U
         2,4-DIMETHYLPHENOL
                                                                 3900
3900
                                                                      PHENANTHRENE
  1900UJ BÉNZOIC ACID
                                                                       ANTHRACENE
         BIS(2-CHLOROETHOXY) METHANE
   390Ú
                                                                 390U
                                                                       DI-N-BUTYLPHTHALATE
   390U
         2.4-DICHLOROPHENOL
                                                                 390U
                                                                       FLUORANTHENE
   390U
         1,2,4-TRICHLOROBENZENE
                                                                 390U
                                                                      PYRENE
         NAPHTHALENE
   390U
                                                                      BENZYL BUTYL PHTHALATE
                                                                 390U
   390UJ
         4-CHLOROANILINE
                                                                 780Ú
                                                                       3,3'-DICHLOROBENZIDINE
   390UJ
         HEXACHLOROBUTADIENE
                                                                      BÉNZO(A)ANTHRACENE
                                                                 390U
   390Ú
         4-CHLORO-3-METHYLPHENOL
                                                                 3900
                                                                       CHRYSENE
   390u
         2-METHYLNAPHTHALENE
                                                                 390U
                                                                      BIS(2-ETHYLHEXYL) PHTHALATE
   39001
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                 3900
3900
                                                                      DI-N-OCTYLPHTHALATE
        2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
   390U
                                                                      BENZO(B AND/OR K)FLUORANTHENE
   1900U
                                                                      BENZO-A-PYRENE
                                                                 390U
   390Ú
         2-CHLORONAPHTHALENE
                                                                      INDENO (1,2,3-CD) PYRENE
DIBENZO(A,H)ANTHRACENE
                                                                 3900
   19000
         2-NITROANILINE
                                                                 390U
         DIMETHYL PHTHALATE ACENAPHTHYLENE
   390U
390U
                                                                 390U BENZO(GHI)PERYLENE
                                                                  15 PERCENT MOISTURE
   390U
         2.6-DINITROTOLUENE
```

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

REMARKS

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EXTR	ACTABI	LE ORGANICS DATA REPORT	EPA-REGION IV	E2D	, AIHI	ENS, GA.		07/12/88
***	PROJI SOURC STAT	LE ORGANICS DATA REPORT * * * * * * * * * * * * * * * * * * *	TYPE: SEDIM	* *	PROG CITY COLL	* * * * * * * ELEM: NSF : ORANGEBURG ECTION START:	* * * * * * * * * * * * * * * * * * *	* * * *** ** ** **
**	CASE I	NO.: 9702 SAS N	ın ·		ם ח	NO - 1408		##
***	* * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * *	* *	* * 1	* * * * * * *	* * * * * * * * * * * * * * * * * * * *	**
	UG/KG	ANALYTICAL RESULTS		1	UG/KG		ANALYTICAL RESULTS	
	40011	DUENO						
	4000	RIS(2-CHIOROFTHVI) FTHER		:	2000U	3-NITROANIL	INE	
	400Ŭ	2-CHLOROPHENOI		2	4000	ACENAPHIHEN	IT TO THE MOI	
	400U	1.3-DICHLOROBENZENE		2	00001	Z, 4-DINITRO Z-NITROPHEN	PRENUL OI	
	400U	1,4-DICHLOROBENZENE			400Ŭ	DIBENZOFURA	N N	
	400U	BENZYL ALCOHOL			400U	2,4-DINITRO	TOLUENE	
	4000	1,2-DICHLOROBENZENE			400U	DIETHYL PHT	HALATE	
4	4000	RIS(2_CHIOPOISODDODVI) ETHED			400U	4-CHLOROPHE	NYL PHENYL ETHER	
_	4000	(3-AND/OR 4-)METHYL PHENOI			4000	FLUORENE	THE	
4	OOUJ	N-NITROSODI-N-PROPYLAMINE		;	20000	2-METHYL-A	INC 6-01N1TDODHENOL	
	400U	HEXACHLOROETHANE			4000	N-NITROSODI	DHENVI AMTRIE / DIDLIERIVI AMTRIE	
4	0001	NITROBENZENE			400U	4-BROMOPHEN	VL PHENVI ETHER	
	400U	ISOPHORONE			400U	HEXACHLOROB	ENZENE (HCB)	
	4000	2-NITROPHENOL			2000U	PENTACHLORO	PHENOL	
2	0000	RENZOIC ACID			4000	PHENANTHREN	E	
-	4000	BIS(2-CHLOROETHOXY) METHANE			4000	ANIHKALENE DI_N_RHTVID	UTUAL ATE	
	400U	2,4-DICHLOROPHENOL			45.1	FILIORANTHEN	HINALAIG F	
	400U	1,2,4-TRICHLOROBENZENE			400Ŭ	PYRENE		
	400U	NAPHTHALENE			400U	BENZYL BUTY	L PHTHALATE	
	4000	4-CHLURUANILINE			810U	3,3'-DICHLO	ROBENZIDINE	
-	40011	A_CHI ODO_3_METUVI DUENOI			4000	BENZO(A)ANT	HRACENE	
	4000	2-METHYI NAPHTHAI FNE			4000	PIC (0-ETUVI	HEVVI) DISTINALATE	
	400U	HEXACHLOROCYCLOPENTADIENE (HCCP)			4000	D13(2-E1912)	MEXTL) PHIMALAIC	
_	400U	2,4,6-TRICHLOROPHENOL			400ŬĴ	BENZO(B AND	/OR K)FLUORANTHENE	
2	10000	2,4,5-TRICHLOROPHENOL			400U	BENZO-A-PYR	ENE	
00	4000	2-CHLURUNAPHTHALENE			400U	INDENO (1,2	,3-CD) PYRENE	
20	4000	ZTNIIKUANILINE DIMETUVI DUTUALATE			4000	DIBENZO(A, H)ANTHRACENE	
	400U	ACENAPHTHYLENE			4000	DENZU(GHI)P	EKYLENE	
	400U	2,6-DINITROTOLUENE			18	PERCENT MUI	STURE	

REMARKS

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*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
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07/12/88

EXTRACTABLE ORGANICS DATA REPORT	07/12/88
*** * * * * * * * * * * * * * * * * *	PROG ELEM: NSF COLLECTED BY: A SPAUGH ** CITY: ORANGEBURG ST: SC ** COLLECTION START: 06/02/88 STOP: 00/00/00 **
** CASE NO.: 9702 SAS NO.: *** * * * * * * * * * * * * * * * * *	CITY: ORANGEBURG ST: SC ** COLLECTION START: 06/02/88 STOP: 00/00/00 ** D. NO.: J413 ** UG/L ANALYTICAL RESULTS 1000 3-NITROANILINE
*** CASE NO.: 9702 SAS NO.: *** *** *** *** *** *** *** *** *** *	100U 3-NITROANILINE 20U ACENAPHTHENE 100UJ 2,4-DINITROPHENOL 100UJ 4-NITROPHENOL 20U DIBENZOFURAN 20U 2,4-DINITROTOLUENE 20U DIETHYL PHTHALATE 20U 4-CHLOROPHENYL PHENYL ETHER 100U 4-NITROANILINE 100U 2-METHYL-4,6-DINITROPHENOL 20U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE 20U 4-BROMOPHENYL PHENYL ETHER 20UJ HEXACHLOROBENZENE (HCB) 100U PENTACHLOROPHENOL 20U PHENANTHRENE 20U ANTHRACENE 20UJ DI-N-BUTYLPHTHALATE 20UJ FLUORANTHENE 20U FUORANTHENE 20U BENZYL BUTYL PHTHALATE 40U 3,3'-DICHLOROBENZIDINE 20U BENZYL BUTYL PHTHALATE 20U BENZYL BUTYL PHTHALATE 20U BENZYL BUTYL PHTHALATE 20U BENZYL BUTYL PHTHALATE 20U BENZO(A)ANTHRACENE 20U BENZO(A)ANTHRACENE 20U BENZO(B AND/OR K)FLUORANTHENE 20U BENZO(B AND/OR K)FLUORANTHENE 20U BENZO(B AND/OR K)FLUORANTHENE 20U BENZO(A)ANTHRACENE 20U BENZO(A)ANTHRACENE

REMARKS

REMARKS

FOOTNOTES

*POUNDIES***
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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EXTRACTABLE ORGANICS DATA REPORT		07/12/88
***	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *
** CASE NO.: 9702 *** * * * * * * * * * * * * * * * * *	SAS NO.: D. NO.: J412 * * * * * * * * * * * * * * * * * * *	** ** ** **
420U PHENOL 420U BIS(2-CHLOROETHYL) ETHER 420U 2-CHLOROPHENOL 420U 1,3-DICHLOROBENZENE 420U 1,4-DICHLOROBENZENE 420U BENZYL ALCOHOL 420U 1,2-DICHLOROBENZENE 420U 2-METHYLPHENOL 420U BIS(2-CHLOROISOPROPYL) ETHER 420U (3-AND/OR 4-)METHYLPHENOL 420U N-NITROSODI-N-PROPYLAMINE 420U NITROBENZENE 420U NITROBENZENE 420U ISOPHORONE 420U 2-NITROPHENOL 420U 2-NITROPHENOL 420U 2,4-DIMETHYLPHENOL 2100UJ BENZOIC ACID 420U BIS(2-CHLOROETHOXY) METHANE 420U 1,2,4-TRICHLOROBENZENE 420U NAPHTHALENE 420U NAPHTHALENE 420UJ HEXACHLOROBUTADIENE 420UJ HEXACHLOROBUTADIENE 420UJ HEXACHLOROBUTADIENE 420UJ HEXACHLOROBUTADIENE 420UJ HEXACHLOROPHENOL 420U 2-METHYLNAPHTHALENE 420UJ HEXACHLOROCYCLOPENTADIENE (HCCP) 420U 2,4,5-TRICHLOROPHENOL 420U 2-CHLORONAPHTHALENE 420U DIMETHYL PHTHALENE 420U DIMETHYL PHTHALENE 420U DIMETHYL PHTHALATE 420U ACENAPHTHYLENE 420U ACENAPHTHYLENE	**************************************	

REMARKS

^{*}FOUTNUTES***

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EXTRACTABLE ORGANICS DATA REPORT	ETA REGION IV LOD, ATRIENS, GA.	07/12/88
*** PROJECT NO. 88-373 SAMPLE NO. 26417 SOURCE: CHAMPION INTERNATION STATION ID: CS-02	SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP	* * * * * * * * * * * * * * * * * * *
** CASE NO.: 9702 *** * * * * * * * * * * * * * * * * *	SAS NO.: D. NO.: J414 ***********************************	**
1800U PHENOL 1800U BIS(2-CHLOROETHYL) ETHER 1800U 2-CHLOROPHENOL 1800U 1,3-DICHLOROBENZENE 1800U 1,4-DICHLOROBENZENE 1800U BENZYL ALCOHOL 1800U 1,2-DICHLOROBENZENE 1800U 2-METHYLPHENOL 1800U BIS(2-CHLOROISOPROPYL) ETHER 1800U N-NITROSODI-N-PROPYLAMINE 1800U N-NITROSODI-N-PROPYLAMINE 1800U NITROBENZENE 1800U ISOPHORONE 1800U 2-NITROPHENOL 1800U 2,4-DIMETHYLPHENOL 890UJ BENZOIC ACID 1800U BIS(2-CHLOROETHOXY) METHANE 1800U 2,4-DICHLOROPHENOL 1800U 1,2,4-TRICHLOROBENZENE 1800U 1,2,4-TRICHLOROBENZENE 1800UJ HEXACHLOROBUTADIENE 1800UJ HEXACHLOROBUTADIENE 1800UJ HEXACHLOROBUTADIENE 1800UJ HEXACHLOROPHENOL 1800UJ -CHLORO-3-METHYLPHENOL 370J 2-METHYLNAPHTHALENE 1800U 2,4,5-TRICHLOROPHENOL 1800U 2,4,5-TRICHLOROPHENOL 1800U 2-NITROANILINE 1800U ACENAPHTHYLENE 1800U ACENAPHTHYLENE 1800U ACENAPHTHYLENE	** * * * * * * * * * * * * * * * * * *	INE

FOOTNOTES

REMARKS

^{*}FOOTNOTES***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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EXTRACTABLE ORGANICS DATA REPOR	RT EPA-REG	IUN IV ESU, ATHENS, GA.	07/12/88
*** * * * * * * * * * * * * * * * * *	T * * * * * * * * * * * * * * * * * * *	OIL PROG ELEM: NSF COLLECTED BY: A CITY: ORANGEBURG ST: S COLLECTION START: 06/02/88	SPAUGH ** STOP: 00/00/00 **
** CASE NO.: 9702 *** * * * * * * * * * * * * * * * * *	SAS NO.: * * * * * * * * * * * * * * * * * * *	D. NO.: J416 * * * * * * * * * * * * * * * * * * *	** ** * * * * * * * * * * * * * * * * *
680U PHENOL 680U BIS(2-CHLOROETHYL) ETG 680U 2-CHLOROPHENOL 680U 1,3-DICHLOROBENZENE 680U 1,4-DICHLOROBENZENE 680U BENZYL ALCOHOL 680U 1.2-DICHLOROBENZENE 680U 2-METHYLPHENOL 680U (3-AND/OR 4-)METHYLPH 680U N-NITROSODI-N-PROPYLA 680U HEXACHLOROETHANE 680U NITROBENZENE 680U SOPHORONE 680U 2-A-DIMETHYLPHENOL 3300UJ BENZOIC ACID 680U 2,4-DIMETHYLPHENOL 680U 1,2,4-TRICHLOROBENZEN 680U 1,2,4-TRICHLOROBENZEN 680U 1,2,4-TRICHLOROBENZEN 680U 4-CHLOROANILINE 680UJ HEXACHLOROBUTADIENE 680U 4-CHLORO-3-METHYLPHEN 680U 4-CHLORO-3-METHYLPHEN 680U 2-METHYLNAPHTHALENE 680U 4-CHLORO-3-METHYLPHEN 680U 2-METHYLNAPHTHALENE 680U 2-CHLOROAPHTHALENE 680U 2-CHLOROAPHTHALENE 680U 2-CHLOROAPHTHALENE 680U 2-CHLOROAPHTHALENE 680U 2-CHLOROAPHTHALENE	THER THER THER THENOL THEN	PROG ELEM: NSF COLLECTED BY: A CITY: ORANGEBURG COLLECTION START: O6/O2/88 D. NO.: J416 ***********************************	ENYLAMINE

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAJ-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERI

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EXTRACTABLE ORGANICS DATA REPORT
** PROJECT NO. 88~373 SAMPLE NO. 26419 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH STATION ID: SB~O3

** STATION ID: SB~O3

** STATION ID: SB~O3
                                                                                                                                   **
* *
    CASE NO.: 9702
                                               SAS NO.:
                                                                        D. NO.: J417
                                                                                                                                   * *
    UG/KG
                     ANALYTICAL RESULTS
                                                                      UG/KG
                                                                                          ANALYTICAL RESULTS
                                                                      1800U 3-NITROANILINE
    370U BIS(2-CHLOROFTHYL) FTHER
                                                                       3700 ACENAPHTHENE
    3700
          2-CHLOROPHENOL
                                                                     1800UJ 2.4-DINITROPHENOL
    370U
          1,3-DICHLOROBENZENE
                                                                      1800U 4-NITROPHENOL
    3700
         1.4-DICHLOROBENZENE
                                                                       370U DIBENZOFURAN
    3700
          BÉNZYL ALCOHOL
                                                                       3700 2.4-DINITROTOLUENE
    3700 1.2-DICHLOROBENZENE
                                                                       3700 DIETHYL PHTHALATE
    370U 2-METHYLPHENOL
                                                                       370U
                                                                             4-CHLOROPHENYL PHENYL ETHER
    370U BIS(2-CHLOROISOPROPYL) ETHER
                                                                       370U
                                                                             FLUORENE
    370U (3-AND/OR 4-)METHYLPHENOL
                                                                      18000
                                                                             4-NITROANILINE
    370U N-NITROSODI-N-PROPYLAMINE
                                                                             2-METHYL-4.6-DINITROPHENOL
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
                                                                      1800U
         HEXACHLOROETHANE
NITROBENZENE
    3700
                                                                       370Ü
    370U
                                                                       3700
                                                                             4-BROMOPHENYL PHENYL ETHER
    3700
         ISOPHORONE
                                                                       370ŭ
                                                                             HEXACHLOROBENZENE (HCB)
    370U 2-NITROPHENOL
                                                                      18000
                                                                             PENTACHLOROPHENOL
    370U 2.4-DIMETHYLPHENOL
                                                                       370U
370U
                                                                             PHENANTHRENE
  1800UJ BÉNZOIC ACID
                                                                             ANTHRACENE
    3700
         BIS(2-CHLOROETHOXY) METHANE
                                                                       3700
                                                                             DI-N-BUTYLPHTHALATE
         2,4-DICHLOROPHENOL
    370U
                                                                       370ŭ
                                                                             FLUORANTHENE
    3700
         1,2,4-TRICHLOROBENZENE
                                                                             PYRENE
                                                                       370U
          NAPHTHAL FNF
    3700
                                                                       3700
                                                                             BENZYL BUTYL PHTHALATE
3,3'-DICHLOROBENZIDINE
    3700
         4-CHLOROANILINE
                                                                      740Ŭ.I
   370UJ HEXACHLOROBUTADIENE
                                                                       370U
                                                                             BÉNZO(A)ANTHRACENE
         4-CHLORO-3-METHYLPHENOL
2-METHYLNAPHTHALENE
    370U
                                                                       370U
                                                                             CHRYSÈNÉ
    3700
                                                                       370ŭ
                                                                             BIS(2-ETHYLHEXYL) PHTHALATE
   370UJ
         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                       370ŭ
                                                                             DI-N-OCTYLPHTHALATE
         2,4,6-TRICHLOROPHENOL
2,4,5-TRICHLOROPHENOL
    3700
                                                                       370ŭ
                                                                             BENZO(B AND/OR K) FLUORANTHENE
   18000
                                                                       370U
                                                                             BENZO-A-PYRENE
    370U
         2-CHLORONAPHTHALENE
                                                                      370U INDENO (1,2,3-CD) PYRENE
370UJ DIBENZO(A,H)ANTHRACENE
   18000
          2-NITROANILINE
    370U DIMETHYL PHTHALATE
                                                                       370U BENZO(GHI)PERYLENE
    370U ACENAPHTHYLENE
                                                                         11 PERCENT MOISTURE
    370U 2.6-DINITROTOLUENE
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REMARKS

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EXTRACTABLE ORGANICS DATA REPORT	EFA-REGION IV ESD, ATHENS, GA.	07/12/88
*** * * * * * * * * * * * * * * * * *	SAMPLE TYPE: SEDIM PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: OR	* * * * * * * * * * * * * * * * * * *
** CASE NO.: 9702 *** * * * * * * * * * * * * * * * * *	SAS NO.: D. NO.: J415 ************************************	**
410U PHENOL 410U BIS(2-CHLOROETHYL) ETHER 410U 2-CHLOROPHENOL 410U 1,3-DICHLOROBENZENE 410U 1,4-DICHLOROBENZENE 410U 1,2-DICHLOROBENZENE 410U 2-METHYLPHENOL 410U BIS(2-CHLOROISOPROPYL) ETHER 63J (3-AND/OR 4-)METHYLPHENOL 410U N-NITROSODI-N-PROPYLAMINE 410U NITROSENZENE 410U ISOPHORONE 410U 2-NITROPHENOL 410U 2,4-DIMETHYLPHENOL 2000UJ BENZOIC ACID 410U BIS(2-CHLOROETHOXY) METHANE 410U 2,4-DIMETHYLPHENOL 410U 2,4-TRICHLOROPHENOL 410U 1,2,4-TRICHLOROBENZENE 410U NAPHTHALENE 410U A-CHLOROANILINE 410U 4-CHLOROANILINE 410U 2-METHYLNAPHTHALENE 410U 4-CHLORO-3-METHYLPHENOL 410U 2,4,5-TRICHLOROPHENOL 410U 2,4,5-TRICHLOROPHENOL 410U 2,4-TRICHLOROPHENOL 410U 2,4-TRICHLOROPHENOL 410U 2-METHYLNAPHTHALENE 410U 2-CHLORO-3-METHYLPHENOL 410U 2-CHLORO-BINGHENOL 410U 2-CHLOROPHENOL 410U 2-CHLORONAPHTHALENE 410U 2-CHLORONAPHTHALENE 410U 2-CHLORONAPHTHALENE 410U METHYL PHTHALATE 410U ACENAPHTHYLPHENE	SAMPLE TYPE: SEDIM PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: O6/02/88 STOP: O6 SAS NO.: D. NO.: J415 2000U 3-NITROANILINE 410U ACENAPHTHENE 2000UJ 2, 4-DINITROPHENOL 410U DIBENZOFURAN 410U 2, 4-DINITROTOLUENE 410U 4-CHLOROPHENYL PHENYL ETHER 410U 4-CHLOROPHENYL PHENYL ETHER 410U 4-CHLOROPHENYL PHENYL ETHER 2000U 4-NITROANILINE 2000U 4-NITROANI	

REMARKS

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*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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EXTRACTABLE ORGANICS DATA REPORT
* *
                                                                                                                        * *
**
                                                                                                                        * *
   CASE NO.: 9702
..
                                        SAS NO.:
                                                                 D. NO.: J419
                                                                                                                        **
UG/KG
               ANALYTICAL RESULTS
                                                                UG/KG
                                                                                ANALYTICAL RESULTS
   360U PHENOL
                                                                1700U 3-NITROANILINE
   360U BIS(2-CHLOROFTHYL) ETHER
360U 2-CHLOROPHENOL
                                                                 360U ACENAPHTHENE
                                                               1700UJ 2.4-DINITROPHENOL
   360U 1,3-DICHLOROBENZENE
360U 1,4-DICHLOROBENZENE
                                                               1700UJ 4-NITROPHENOL
                                                                 360U DIBENZOFURAN
   360U BENZYL ALCOHOL
                                                                 360U 2.4-DINITROTOLUENE
   360U 1.2-DICHLOROBENZENE
                                                                 3600 DIETHYL PHTHALATE
   360U 2-METHYLPHENOL
                                                                 3600
                                                                      4-CHLOROPHENYL PHENYL ETHER
  360UJ BIS(2-CHLOROISOPROPYL) ETHER
                                                                 360U
                                                                      FLUORENE
   360U (3-AND/OR 4-)METHYLPHENOL
                                                                17000
                                                                      4-NITROANILINE
  360UJ N-NITROSODI-N-PROPYLAMINE
                                                                1 700Ŭ
                                                                      2-METHYL-4.6-DINITROPHENOL
   3600 HEXACHLOROETHANE
                                                                      N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
                                                                 360U
   360UJ NITROBENZENE
                                                                 360U
                                                                      4-BROMOPHENYL PHENYL FTHER
   360U ISOPHORONE
                                                                1700U HEXACHLOROBENZENE (HCB)
   360U 2-NITROPHENOL
                                                                 360U PENTACHLOROPHENOL
   360U 2.4-DIMETHYLPHENOL
                                                                 360U
                                                                      PHENANTHRENE
  1700U BENZOIC ACID
                                                                 360Ú
                                                                      ANTHRACENE
   360U BIS(2-CHLOROETHOXY) METHANE
                                                                      DI-N-BUTYLPHTHALATE
                                                                 360U
   360U 2,4-DICHLOROPHENOL
                                                                 360Ŭ
                                                                      FLUORANTHENE
   3600 1.2.4-TRICHLOROBENZENE
                                                                 360U
                                                                      PYRENE
   360U NAPHTHALENE
                                                                 3600
7200
                                                                      BENZYL BUTYL PHTHALATE
   360U 4-CHLOROANILINE
                                                                      3.3'-DICHLOROBENZIDINE
   360UJ HEXACHLOROBUTADIENE
                                                                 3600
                                                                      BÉNZO(A)ANTHRACENE
   360U 4-CHLORO-3-METHYLPHENOL
                                                                 3600
                                                                      CHRYSÈNÉ
   360U 2-METHYLNAPHTHALENE
                                                                      BIS(2-ETHYLHEXYL) PHTHALATE
DI-N-OCTYLPHTHALATE
BENZO(B AND/OR K)FLUORANTHENE
                                                                 360U
 360U Z-METHYLNAPHTHALENE
360U HEXACHLOROCYCLOPENTADIENE (HCCP)
360U 2,4,6-TRICHLOROPHENOL
1700U 2,4,5-TRICHLOROPHENOL
360U 2-CHLORONAPHTHALENE
1700UJ 2-NITROANILINE
360U DIMETHYL PHTHALATE
                                                                 360U
                                                                3600.1
                                                                      BENZO-A-PYRENE
                                                                 360V
                                                                 360U INDENO (1,2,3-CD) PYRENE
360U DIBENZO(A,H)ANTHRACENE
                                                                 360U BENZO(GHI)PERYLENE
   360U ACENAPHTHYLENE
                                                                   8 PERCENT MOISTURE
   360U 2.6-DINITROTOLUENE
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REMARKS

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

EPA-REGION IV ESD, ATHENS, GA. 07/12/88 EVIDACTABLE OPCANICS DATA DEPORT

EXTRACTABLE ORGANICS DATA REPORT	07,12,60
** PROJECT NO. 88-373 SAMPLE NO. 26424 SAMPLE TYPE: SEDIM ** SOURCE: CHAMPION INTERNATION ** STATION ID: SD-05 REGION IV QC BLANK **	* * * * * * * * * * * * * * * * * * *
** CASE NO.: 9702 SAS NO.: *** * * * * * * * * * * * * * * * * *	D. NO.: J426 ** * * * * * * * * * * * * * * * * *
390U PHENOL 390U BIS(2-CHLOROETHYL) ETHER 390U 1, 3-DICHLOROBENZENE 390U 1, 4-DICHLOROBENZENE 390U 1, 4-DICHLOROBENZENE 390U 1, 2-DICHLOROBENZENE 390U 2-METHYLPHENOL 390U 2-METHYLPHENOL 390U (3-AND/OR 4-)METHYLPHENOL 390U N-NITROSODI-N-PROPYLAMINE 390U NITROBENZENE 390U NITROBENZENE 390U NITROBENZENE 390U NITROBENZENE 390U NITROBENZENE 390U SOPHORONE 390U 2-MITROPHENOL 390U 2, 4-DIMETHYLPHENOL 1900U BÉNZOIC ACID 390U 2, 4-DICHLOROETHOXY) METHANE 390U 2, 4-DICHLOROPHENOL 390U 2, 4-DICHLOROPHENOL 390U 2, 4-DICHLOROPHENOL 390U 2, 4-DICHLOROBENZENE 390U 4-CHLOROBUTADIENE 390U 4-CHLOROBUTADIENE 390U 4-CHLORO-3-METHYLPHENOL 390U 2-METHYLNAPHTHALENE 390U 4-CHLORO-3-METHYLPHENOL 390U 2, 4, 6-TRICHLOROPHENOL 1900U 2, 4, 5-TRICHLOROPHENOL 1900U 2, 4, 5-TRICHLOROPHENOL 1900U 2-MITROANILINE 390U DIMETHYL PHTHALATE 390U DIMETHYL PHTHALATE 390U ACENAPHTHYLENE	1900U 3-NITROANILINE 390U ACENAPHTHENE 1900U 2,4-DINITROPHENOL 1900U 4-NITROPHENOL 390U DIBENZOFURAN 390U 2,4-DINITROTOLUENE 390U DIETHYL PHTHALATE 390U 4-CHLOROPHENYL PHENYL ETHER 1900U 4-NITROANILINE 1900U 2-METHYL-4,6-DINITROPHENOL 390U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE 390U 4-BROMOPHENYL PHENYL ETHER 390U HEXACHLOROBENZENE (HCB) 1900U PENTACHLOROPHENOL 51J PHENANTHRENE 390U ANTHRACENE 390U DI-N-BUTYLPHTHALATE 390U FLUORANTHENE 390U BENZYL BUTYL PHTHALATE 390U BENZYL BUTYL PHTHALATE 390U BENZO(A)ANTHRACENE 390U CHRYSENE 180J BIS(2-ETHYLHEXYL) PHTHALATE 390U BENZO(A)ANTHRACENE 390U BENZO(BAND/OR K)FLUORANTHENE 390U BENZO(BAND/OR K)FLUORANTHENE 390U BENZO(A)ANTHRACENE 390U BENZO(A)ANTHRACENE 390U DI-N-OCTYLPHTHALATE 390U BENZO(BAND/OR K)FLUORANTHENE 390U BENZO(BAND/OR K)FLUORANTHENE 390U BENZO(A)ANTHRACENE 390U DI-N-OCTYLPHTHALATE 390U BENZO(BAND/OR K)FLUORANTHENE

REMARKS ***REMARKS***

FOOTNOTES

*FOUNDIES***
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

EXTRACTABLE ORGANICS DATA REPORT		IV ESD, ATTIENS, GA.	07/12/88
*** * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	PROG ELEM: NSF COLLECTED BY: A CITY: ORANGEBURG ST: COLLECTION START: 06/02/88 D. NO.: J420	SPAUGH ** SC ** STOP: 00/00/00 **
** CASE NO.: 9702	SAS NO.:	D. NO - J420	**
UG/KG ANALYTICAL	* * * * * * * * * * * * * * * * * * *	" * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *
** STATION ID: SS-04 *** ** CASE NO.: 9702 *** * * * * * * * * * * * * * * * * *	ETHER OL NE HANE	1700U 3-NITROANILINE 340U ACENAPHTHENE 1700UJ 2,4-DINITROPHENOL 1700UJ 4-NITROPHENOL 340U DIBENZOFURAN 340U 2,4-DINITROTOLUENE 340U DIETHYL PHTHALATE 340U 4-CHLOROPHENYL PHENYL ETHEN 340U 4-NITROANILINE 1700U 2-METHYL-4,6-DINITROPHENOL 340U N-NITROSODIPHENYLAMINE/DIPN 340U 4-BROMOPHENYL PHENYL ETHEN 340U HEXACHLOROBENZENE (HCB) 1700U PENTACHLOROPHENOL 340U PHENANTHRENE 340U DI-N-BUTYLPHTHALATE 67J FLUORANTHENE 340U DI-N-BUTYLPHTHALATE 67J FLUORANTHENE 53J PYRENE 340U BENZYL BUTYL PHTHALATE 690U 3,3'-DICHLOROBENZIDINE 340U BENZYL BUTYL PHTHALATE 690U 3,3'-DICHLOROBENZIDINE 340U BENZYL BUTYL PHTHALATE 340U BENZYL BUTYL PHTHALATE 340U BENZYL BUTYL PHTHALATE 340U BENZO(A)ANTHRACENE 56J CHRYSENE 5100 BIS(2-ETHYLHEXYL) PHTHALATI 340U BENZO(B AND/OR K)FLUORANTHI	HENYLAMINE E

REMARKS

^{**}COUNDIES***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT PROJECT NO. 88-373 SAMPLE NO. 26416 SAMPLE TYPE: SEDIM PROG ELEM: NSF COLLECTED BY: A SPAUGH SOURCE: CHAMPION INTERNATION STATION ID: SD-03 CITY: ORANGEBURG COLLECTION START: 06/02/88 D. NO.: J412 ST: SC * * * * STOP: 00/00/00 ** * * CASE.NO.: 9702 SAS NO.: ** * * * * * *

RESULTS UNITS COMPOUND 600JN UG/KG BROMOHEXANE RESULTS UNITS COMPOUND 500J UG/KG 1 UNIDENTIFIED COMPOUND

^{*}A-AVERAGE VALUE *NA-NO! ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

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MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26417 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION

CITY: ORANGEBURG ST: SC

COLLECTION START: 06/02/88 STATION ID: CS-02 STOP: 00/00/00 CASE.NO.: 9702 SAS NO.: D. NO.: J414

** * *

RESULTS UNITS COMPOUND 400JN UG/KG CARBAZOLE 40000J UG/KG 13 UNIDENTIFIED COMPOUNDS

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* *

* *

RESULTS UNITS COMPOUND 3000JN UG/KG BENZOFLUORANTHENE (NOT B OR K)

^{*}A-AVERAGE VALUE *NA-NOI ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATFRIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD. ATHENS. GA.

07/12/88

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26418 SAMPLE TYPE: SOIL SOURCE: CHAMPION INTERNATION STATION ID: SS-03 CASE.NO.: 9702 SAS CITY: ORANGEBURG * * ST: SC ** COLLECTION START: 06/02/88 STOP: 00/00/00 ** * * MD NO: ** SAS NO.: D. NO.; J416 * * * * * *

RESULTS UNITS COMPOUND N UG/KG PETROLEUM PRODUCT RESULTS UNITS COMPOUND 10000J UG/KG 8 UNIDENTIFIED COMPOUNDS

^{*}A-AVERAGE VALUE *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *NA-NŬ! ANALYZED

^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

STOP: 00/00/00

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* *

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MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROG ELEM: NSF COLLECTED BY: A SPAUGH PROJECT NO. 88-373 SAMPLE NO. 26421 SAMPLE TYPE: SEDIM * *

SOURCE: CHAMPION INTERNATION STATION ID: SD-02 CASE.NO.: 9702 SAS CITY: ORANGEBURG ST: SC

COLLECTION START: 06/02/88 ** * * SAS NO.: D. NO.: J415

* *

RESULTS UNITS COMPOUND 1000JN UG/KG BROMOHEXANE RESULTS UNITS COMPOUND 20000J UG/KG 11 UNIDENTIFIED COMPOUNDS

^{*}A-AVERAGE VALUE *NA-NOI ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. *R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT PROJECT NO. 88-373 SAMPLE NO. 26427 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: A SPAUGH SOURCE: CHAMPION INTERNATION CITY: ORANGEBURG ST: SC * * CITY: ORANGEBURG COLLECTION START: 06/02/88 * * STATION ID: SS-04 STOP: 00/00/00 * * ** CASE.NO.: 9702 SAS NO.: D. NO.: J420 * * **

RESULTS UNITS COMPOUND 800JN UG/KG BROMOHEXANE 20000J UG/KG 17 UNIDENTIFIED COMPOUNDS RESULTS UNITS COMPOUND 10000JN UG/KG PENTACOSANE

^{*}A-ACTUAL VALUE *NA-NOI ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

****MEMORANDUM*****

DATE: 07/13/88

SUBJECT: Results of Pesticide/PCB Analysis;

88-373 CHAMPION INTERNATION

ORANGEBURG SC CASE NO: 9702

FROM: Robert W. Knight

Chief, Laboratory Evaluation/Quality Assurance Section

TO: PHIL BLACKWELL

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

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PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00
    PROJECT NO. 88-373 SAMPLE NO. 26411 SAMPLE TYPE: SOIL
* *
    SOURCE: CHAMPION INTERNATION
**
* *
    STATION ID: SS-01
                                                                                                             * *
    CASE NUMBER: 9702
                           SAS NUMBER:
                                                            D. NUMBER: J409
                                                                                                             * *
* *
                                                                                                             * *
* *
UG/KG
                                                                           ANALYTICAL RESULTS
   UG/KG
                  ANALYTICAL RESULTS
   8.2U ALPHA-BHC
                                                            82U METHOXYCHLOR
   8.20 BETA-BHC
                                                            16U ENDRIN KETONE
                                                                CHLORDANE (TECH. MIXTURE) /1
   8.2U DELTA-BHC
  8.2UR GAMMA-BHC (LINDANE)
8.2U HEPTACHLOR
                                                                GAMMA-CHLORDANE /2
                                                            82U ALPHA-CHLORDANE
                                                           1600
   8.20 ALDRIN
                                                                TOXAPHENE
   8.20 HEPTACHLOR EPOXIDE
                                                            82U PCB-1016 (AROCLOR 1016)
                                                               PCB-1221 (AROCLOR 1221)
   8.20 ENDOSULFAN I (ALPHA)
                                                            82U
                                                               PCB-1232 (AROCLOR 1232)
    16U DIELDRIN
                                                            82U
    16U 4,4'-DDE (P,P'-DDE)
                                                            82U
                                                               PCB-1242 (AROCLOR 1242)
    16U ENDRIN
                                                            82U PCB-1248 (AROCLOR 1248)
                                                           160U PCB-1254 (AROCLOR 1254)
160U PCB-1260 (AROCLOR 1260)
    16U ENDOSULFAN II (BETA)
    16U 4.4'-DDD (P.P'-DDD)
    16U ENDOSULFAN SULFATE
                                                             2 PERCENT MOISTURE
    16U 4.4'-DDT (P.P'-DDT)
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^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

^{*}R-OC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION. *C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED. SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

EPA-REGION IV ESD, ATHENS, GA. 07/12/88 PESTICIDES/PCB'S DATA REPORT

*** PROJECT NO. 88-3 ** SOURCE: CHAMPION ** STATION ID: SB-C ** CASE NUMBER: 97	* * * * * * * * * * * * * * * * * * *	* * *	PROG ELEM: NSF COLLECTED BY: A SPAUGH ** CITY: ORANGEBURG ST: SC ** COLLECTION START: 06/02/88 STOP: 00/00/00 ** D. NUMBER: J411 **
** *** *** *** *** *** *** *** **	EPOXIDE I (ALPHA) P,P'-DDE) I II (BETA) P,P'-DDD) I SULFATE		·

REMARKS

REMARKS

^{*}FOUNDIES***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

*** * * * * * * * * * * * * * * * * *	AMPION INTERNATIO : SW-01	* * * * * * * E NO. 26413 S N SAS NUMBER:	* * * * * * AMPLE TYPE	* * * * * : SURFACEWA	CITY:	* * * * * * * * * * * * * * * * * * *	ECTED BY: A ST: /02/88		* * * * * * * *** ** ** ** ** **
*** * * * * * * * UG/L	* * * * * * * * * ANALYTIC	AL RESULTS	* * * * * :	* * * * * *	* * * * UG/L	* * * * * * * *	ANALYTICAL F		* * * * * * ***
0.050U HEPTA 0.050U ALDRI 0.050U HEPTA 0.050U ENDOS 0.10U DIELD 0.10U 4,4'- 0.10U ENDOS 0.10U ENDOS 0.10U 4,4'- 0.10U ENDOS	BHC -BHC (LINDANE) CHLOR N CHLOR EPOXIDE ULFAN I (ALPHA) RIN DDE (P,P'-DDE)				0.10U 0.50U 0.50U 0.50U 0.50U 0.50U 0.50U 0.50U 0.50U	METHOXYCHLOR ENDRIN KETONE CHLORDANE (TEC GAMMA-CHLORDAN ALPHA-CHLORDAN TOXAPHENE PCB-1016 (AROC PCB-1221 (AROC PCB-1232 (AROC PCB-1242 (AROC PCB-1248 (AROC PCB-1254 (AROC PCB-1254 (AROC PCB-1260 (AROC	E /2 E /2 LOR 1016) LOR 1221) LOR 1232) LOR 1242) LOR 1248) LOR 1254)	/1	

REMARKS

PESTICIDES/PCB'S DATA REPORT

REMARKS

^{*}COUNDIES***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

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*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

PESTICIDES/PCB'S DATA REPORT	·
*** * * * * * * * * * * * * * * * * *	
*** * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *
9.8U ALPHA-BHC 9.8U BETA-BHC 9.8U DELTA-BHC 9.8UR GAMMA-BHC (LINDANE) 9.8U HEPTACHLOR 9.8U ALDRIN 9.8U HEPTACHLOR EPOXIDE 9.8U HEPTACHLOR EPOXIDE 9.8U ENDOSULFAN I (ALPHA) 20U DIELDRIN 20U 4,4'-DDE (P,P'-DDE) 20U ENDRIN 20U ENDOSULFAN II (BETA) 20U 4,4'-DDD (P,P'-DDD) 20U ENDOSULFAN SULFATE 20U 4,4'-DDT (P,P'-DDT)	98U METHOXYCHLOR 20U ENDRIN KETONE CHLORDANE (TECH. MIXTURE) /1 98U GAMMA-CHLORDANE /2 98U ALPHA-CHLORDANE /2 200U TOXAPHENE 98U PCB-1016 (AROCLOR 1016) 98U PCB-1221 (AROCLOR 1221) 98U PCB-1232 (AROCLOR 1232) 98U PCB-1242 (AROCLOR 1232) 98U PCB-1248 (AROCLOR 1242) 98U PCB-1254 (AROCLOR 1254) 200U PCB-1260 (AROCLOR 1254) 200U PCB-1260 (AROCLOR 1260) 18 PERCENT MOISTURE

REMARKS

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

PESTICIDES/PCB'S D. *** * * * * * * * ** PROJECT NO. 8 ** SOURCE: CHAMP ** STATION ID: S' ** CASE NUMBER:	# # # # # # # # # # # # # # # # # # #	TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: A SPAUGH ** CITY: ORANGEBURG COLLECTION START: 06/02/88 ST: SC STOP: 00/00/00 ** D. NUMBER: J413
*** * * * * * * * UG/L	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *
0.050U HEPTACHL 0.050U ALDRIN 0.050U HEPTACHL 0.050U ENDOSULF 0.10U DIELDRIN 0.10U 4,4'-DDE 0.10U ENDOSULF 0.10U 4,4'-DDD 0.10U 4,4'-DDD	C HC HC (LINDANE) OR LOR EPOXIDE FAN I (ALPHA)	0.50U METHOXYCHLOR 0.10U ENDRIN KETONE CHLORDANE (TECH. MIXTURE) /1 0.50U GAMMA-CHLORDANE /2 0.50U ALPHA-CHLORDANE /2 1.0U TOXAPHENE 0.50U PCB-1016 (AROCLOR 1016) 0.50U PCB-1221 (AROCLOR 1221) 0.50U PCB-1232 (AROCLOR 1232) 0.50U PCB-1242 (AROCLOR 1242) 0.50U PCB-1248 (AROCLOR 1242) 0.50U PCB-1254 (AROCLOR 1254) 1.0U PCB-1250 (AROCLOR 1254) 1.0U PCB-1260 (AROCLOR 1260)

REMARKS

DECTIONED IDODIC DATA DEDODE

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

REMARKS ***REMARKS***

FOOTNOTES *A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

^{*}R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION. 1. WHEN NO VALUE IS REPORTED. SEE CHLORDANE CONSTITUENTS. *C-CONFIRMED BY GCMS

```
PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373 SAMPLE NO. 26417 SAMPLE TYPE: SOIL
                                                        CITY: ORANGEBURG ST: SC
    SOURCE: CHAMPION INTERNATION
* *
                                                                                                         * *
    STATION ID: CS-02
                                                        COLLECTION START: 06/02/88
* *
                                                                               STOP: 00/00/00
                                                                                                         * *
    CASE NUMBER: 9702
                          SAS NUMBER:
**
                                                         D. NUMBER: J414
                                                                                                         * *
**
                                                                                                         * *
***
   UG/KG
                 ANALYTICAL RESULTS
                                                         UG/KG
                                                                         ANALYTICAL RESULTS
    18U ALPHA-BHC
                                                         1800 METHOXYCHLOR
    18U BETA-BHC
                                                         360
                                                             ENDRIN KETONE
    18U DELTA-BHC
                                                             CHLORDANE (TECH. MIXTURE) /1
   18UR GAMMA-BHC (LINDANE)
                                                         180U
                                                             GAMMA-CHLORDANE
                                                                           /2
    18U HEPTACHLOR
                                                         180U
                                                             ALPHA-CHLORDANE
    18U ALDRIN
                                                         360u
                                                             TOXAPHENE
       HEPTACHLOR EPOXIDE
                                                             PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
    180
                                                         180U
        ENDOSULFAN I (ALPHA)
    18U
                                                         1800
     72 DIELDRIN
                                                         1800
                                                             PCB-1232 (AROCLOR 1232)
    36U 4.4'-DDE (P.P'-DDE)
                                                         1800
                                                             PCB-1242 (AROCLOR 1242)
                                                         180U PCB-1248 (AROCLOR 1248)
360U PCB-1254 (AROCLOR 1254)
    36U ENDRIN
    36U ENDOSULFAN II (BETA)
    36U 4,4'-DDD (P,P'-DDD)
                                                         360U PCB-1260 (AROCLOR 1260)
    36U ENDOSULFAN SULFATE
                                                          10 PERCENT MOISTURE
    36U 4.4'-DDT (P.P'-DDT)
```

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION_LIMIT.

^{*}R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION. *C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

EPA-REGION IV ESD, ATHENS, GA. 07/12/88 PESTICIDES/PCB'S DATA REPORT

```
PROJECT NO. 88-373 SAMPLE NO. 26418 SAMPLE TYPE: SOIL
                                                        PROG ELEM: NSF COLLECTED BY: A SPAUGH
                                                                                                        **
                                                        CITY: ORANGEBURG ST: SC
    SOURCE: CHAMPION INTERNATION
    STATION ID: SS-03
                                                        COLLECTION START: 06/02/88
                                                                                    STOP: 00/00/00
* *
                                                                                                        * *
**
    CASE NUMBER: 9702
                          SAS NUMBER:
                                                         D. NUMBER: J416
                                                                                                        * *
                                                                                                        * *
UG/KG
                  ANALYTICAL RESULTS
                                                        UG/KG
                                                                        ANALYTICAL RESULTS
   8.2U ALPHA-BHC
                                                         820
                                                             METHOXYCHLOR
   8. 2U
        BETA-BHC
                                                             ENDRIN KETONE
                                                         160
   8.20
        DELTA-BHC
                                                             CHLORDANE (TECH. MIXTURE) /1
  8.2UR
        GAMMA-BHC (LINDANE)
                                                         820
                                                             GAMMA-CHLORDANE
                                                                           /2
   8,20
        HEPTACHLOR
                                                         82U
                                                             ALPIIA-CHLORDANE
   8.20
        ALDRIN
                                                        1600
                                                             TOXAPHENE
                                                             PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
PCB-1232 (AROCLOR 1232)
   8.2U
        HEPTACHLOR EPOXIDE
                                                         82U
        ENDOSULFAN I (ALPHA)
                                                         82U
   8.20
                                                         82Ŭ
        DIELDRIN
    160
        4.4'-DDE (P.P'-DDE)
                                                         82Ú
                                                             PCB-1242 (AROCLOR 1242)
    16U
    160
        ENDRIN
                                                         82U
                                                             PCB-1248 (AROCLOR 1248)
        ENDOSULFAN II (BETA)
                                                        1600 PCB-1254 (AROCLOR 1254)
    160
                                                        160U PCB-1260 (AROCLOR 1260)
    160
        4.4'-DDD (P.P'-DDD)
       ENDOSULFAN SULFATE
    16U
                                                             PERCENT MOISTURE
        4.4'-DDT (P.P'-DDT)
```

REMARKS

REMARKS

FOOTNOTES

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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^{*}C-CONFIRMED BY GCMS WHEN NO VALUE IS REPORTED. SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD. ATHENS. GA.

07/12/88 PESTICIDES/PCB'S DATA REPORT

```
PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START. 06/02/88 STOP: 00/00/00
    PROJECT NO. 88-373 SAMPLE NO. 26419 SAMPLE TYPE: SOIL
                                                                                                                 **
    SOURCE: CHAMPION INTERNATION
* *
    STATION ID: SB-03
* *
                                                                                                                 * *
    CASE NUMBER: 9702
                            SAS NUMBER:
* *
                                                              D. NUMBER: J417
                                                                                                                 * *
                                                                                                                 **
UG/KG
                    ANALYTICAL RESULTS
                                                             UG/KG
                                                                               ANALYTICAL RESULTS
   9.00 ALPHA-BHC
                                                              90u
                                                                  METHOXYCHLOR
   9. OU BETA-BHC
                                                                  ENDRIN KETONE
                                                              180
   9.00 DELTA-BHC
                                                                  CHLORDANE (TECH. MIXTURE) /1
  9. OUR GAMMA-BHC (LINDANE)
                                                              900
                                                                  GAMMA-CHLORDANE
                                                                                 /2
/2
                                                                  ALPHA-CHLORDANE
   9. OU HEPTACHLOR
                                                              900
   9.00
        ALDRIN
                                                                  TOXAPHENE
                                                             1800
        HEPTACHLOR EPOXIDE
   9.00
                                                              900
                                                                  PCB-1016 (AROCLOR 1016)
                                                                  PCB-1221 (AROCLOR 1221)
PCB-1232 (AROCLOR 1232)
PCB-1242 (AROCLOR 1242)
   9.00 ENDOSULFAN I (ALPHA)
                                                              900
        DIELDRIN
    18U
                                                              900
    18U 4.4'-DDE (P.P'-DDE)
                                                              900
                                                                  PCB-1248 (AROCLOR 1248)
PCB-1254 (AROCLOR 1254)
    18U ENDRIN
                                                              90U
    18U ENDOSULFAN II (BETA)
                                                             180U
    18U 4.4'-DDD (P.P'-DDD)
                                                             1800
                                                                  PCB-1260 (AROCLOR 1260)
    18U ENDOSULFAN SULFATE
                                                               11
                                                                  PERCENT MOISTURE
    18U 4,4'-DDT (P,P'-DDT)
```

REMARKS

REMARKS

^{*}NA-NOT ANALYZED ***A-AVERAGE VALUE** *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL *K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

^{*}R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION. *C-CONFIRMED BY GCMS WHEN NO VALUE IS REPORTED, ŠĒĒ CHLORDANĒ CONSTĪTUĒNTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

PESTICIDES/PCB'S DATA REPORT		200,	3,7,2,33
*** * * * * * * * * * * * *			* * * * * * * * * * * * * * * * * * * *
	AMPLE NO. 26420 SAMPLE TYPE: SURFACE	WA PROG ELEM: NSF COLLECTED BY: A SPAUGH	
** SOURCE: CHAMPION_INTERN	ATION	CITY: ORANGEBURG ST: SC	**
** STATION ID: SW-02		COLLECTION START: 06/02/88 STOP	: 00/00/00 **
	SAS NUMBER:	D. NUMBER: J418	**
**			**
	* * * * * * * * * * * * * * * * * * *		* * * * * * * * * * * * * * * * * * * *
UG/L ANAL	YTICAL RESULTS	UG/L ANALYTICAL RESULTS	
O.050U ALPHA-BHC		0.50U METHOXYCHLOR	
O. OSOU BETA-BHC		0.10U ENDRIN KETONE	
O. OSOU DELTA-BHC		CHLORDANE (TECH. MIXTURE) /1	
O. OSOUR GAMMA-BHC (LINDANE		0.50U GAMMA-CHLORDANE /2	
O. 050U HEPTACHLOR	•	0.50U ALPHA-CHLORDANE /2	
O.O5OU ALDRIN		1.OU TOXAPHENE	
O. OSOU HEPTACHLOR EPOXIDE		0.50U PCB-1016 (AROCLOR 1016)	
O.O5OU ENDOSULFAN I (ALPH	IA)	0.50U PCB-1221 (AROCLOR 1221)	
O.10U DIELDRIN		0.50U PCB-1232 (AROCLOR 1232)	
O.10U 4,4'-DDE (P,P'-DDE	()	0.50U PCB-1242 (AROCLOR 1242)	
O.10U ENDRIN	•••	0.50U PCB-1248 (AROCLOR 1248)	
O.10U ENDOSULFAN II (BET		1.0U PCB-1254 (AROCLOR 1254)	
0.10U 4,4'-DDD (P,P'-DDD		1.0U PCB-1260 (AROCLOR 1260)	
O. 100 ENDOSULFAN SULFATE			
O.10U 4,4'-DDT (P,P'-DDT)		

REMARKS

REMARKS

FOOTNOTES *FOUNDIES***

*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

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*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

*C-CONFIRMED BY GCMS

1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

```
PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH CITY: ORANGEBURG ST: SC COLLECTION START: 06/02/88 STOP: 00/00/00
    PROJECT NO. 88-373 SAMPLE NO. 26421 SAMPLE TYPE: SEDIM
**
    SOURCE: CHAMPION INTERNATION
**
    STATION ID: SD-02
    CASE NUMBER: 9702
                              SAS NUMBER:
                                                                 D. NUMBER: J415
                                                                                                                        * *
                                                                                                                        * *
ANALYTICAL RESULTS
                                                                 UG/KG
                                                                                  ANALYTICAL RESULTS
   UG/KG
   9.90 ALPHA-BHC
                                                                  990 METHOXYCHLOR
   9.90 BETA-BHC
                                                                  200
                                                                      ENDRIN KETONE
                                                                       CHLORDANE (TECH. MIXTURE) /1
   9.90 DELTA-BHC
  9.9UR
         GAMMA-BHC (LINDANE)
                                                                  9911
                                                                      GAMMA-CHLORDANE
                                                                                      /2
/2
   9.90
         HEPTACHLOR
                                                                  990
                                                                      ALPHA-CHLORDANE
   9.90
         ALDRIN
                                                                 2000
                                                                      TOXAPHENE
   9. 9U
         HEPTACHLOR EPOXIDE
                                                                  99U
                                                                      PCB-1016 (AROCLOR 1016)
                                                                 99U PCB-1016 (AROCLOR 1016)

99U PCB-1221 (AROCLOR 1221)

99U PCB-1232 (AROCLOR 1232)

99U PCB-1242 (AROCLOR 1242)

99U PCB-1248 (AROCLOR 1248)

200U PCB-1254 (AROCLOR 1254)

200U PCB-1260 (AROCLOR 1260)
   9.90
         ENDOSULFAN I (ALPHA)
    20U
         DIELDRIN
         4.4'-DDE (P.P'-DDE)
    20U
    200 ENDRIN
    20U ENDOSULFAN II (BETA)
    20U 4,4'-DDD (P,P'-DDD)
    200 ENDOSULFAN SULFATE
                                                                  19 PERCENT MOISTURE
    20U 4.4'-DDT (P.P'-DDT)
```

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

07/12/88

PESTICIDES/PCB'S DATA REPORT		0.7,12,00
	CITY: ORANGEBURG ST: SC	
*** * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
8.7U ALPHA-BHC 8.7U BETA-BHC 8.7U DELTA-BHC 8.7U DELTA-BHC 8.7U GAMMA-BHC (LINDANE) 8.7U HEPTACHLOR 8.7U ALDRIN 8.7U HEPTACHLOR EPOXIDE 8.7U ENDOSULFAN I (ALPHA) 17U DIELDRIN 17U ENDRIN 17U ENDRIN 17U ENDOSULFAN II (BETA) 17U ENDOSULFAN II (BETA) 17U ENDOSULFAN SULFATE 17U 4,4'-DDD (P,P'-DDD)	87U METHOXYCHLOR 17U ENDRIN KETONE CHLORDANE (TECH. MIXTURE) /1 87U GAMMA-CHLORDANE /2 87U ALPHA-CHLORDANE /2 17OU TOXAPHENE 87U PCB-1016 (AROCLOR 1016) 87U PCB-1221 (AROCLOR 1221) 87U PCB-1232 (AROCLOR 1232) 87U PCB-1242 (AROCLOR 1242) 87U PCB-1244 (AROCLOR 1242) 87U PCB-1254 (AROCLOR 1254) 17OU PCB-1260 (AROCLOR 1260) 8 PERCENT MOISTURE	

REMARKS

REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATFRIAL
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*C-CONFIRMED BY GCMS
1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

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PESTICIDES/PCB'S DATA REPORT
PROG ELEM: NSF COLLECTED BY: A SPAUGH
    PROJECT NO. 88-373 SAMPLE NO. 26424 SAMPLE TYPE: SEDIM
                                                                                                               * *
    SOURCE: CHAMPION INTERNATION
STATION ID: SD-05 REGION IV QC BLANK
CASE NUMBER: 9702 SAS NUMBER:
                                                            CITY: ORANGEBURG ST: SC
**
                                                                                                               **
                                                            COLLECTION START: 06/02/88
                                                                                          STOP: 00/00/00
* *
                                                                                                               * *
                                                             D. NUMBER: J426
* *
                                                                                                               **
* *
                                                                                                               * *
UG/KG
                    ANALYTICAL RESULTS
                                                            UG/KG
                                                                             ANALYTICAL RESULTS
   9.4U ALPHA-BHC
                                                             940
                                                                 METHOXYCHLOR
   9.40
        BETA-BHC
                                                             190
                                                                 ENDRIN KETONE
   9.40
        DELTA-BHC
                                                                 CHLORDANE (TECH. MIXTURE) /1
   9.40
        GAMMA-BHC (LINDANE)
                                                             940
                                                                 GAMMA-CHLORDANE
                                                                                /2
   9.40
        HEPTACHLOR
                                                             940
                                                                 ALPHA-CHLORDANE
                                                                 TOXAPHENE
   9.40
        ALDRIN
                                                            1900
   9,40
        HEPTACHLOR EPOXIDE
                                                             94U
                                                                 PCB-1016 (AROCLOR 1016)
        ENDOSULFAN I (ALPHA)
                                                                 PCB-1221 (AROCLOR 1221)
   9.40
                                                             940
                                                                 PCB-1232 (AROCLOR 1232)
PCB-1242 (AROCLOR 1242)
PCB-1248 (AROCLOR 1248)
    190
        DIELDRIN
                                                             940
                                                             94U
    190
        4.4'-DDE (P.P'-DDE)
        ENDRIN
                                                             94U
    190
                                                            1900 PCB-1254 (AROCLOR 1254)
    190
        ENDOSULFAN II (BETA)
        4,4'-DDD (P,P'-DDD)
                                                            190U PCB-1260 (AROCLOR 1260)
    190
    190
        ENDOSULFAN SULFATE
                                                              15 PERCENT MOISTURE
        4.4'-DDT (P.P'-DDT)
    190
```

RFMARKS

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^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION. *C-CONFIRMED BY GCMS WHEN NO VALUE IS REPORTED. SEE CHLORDANE CONSTITUENTS.

```
PESTICIDES/PCB'S DATA REPORT
PROJECT NO. 88-373 SAMPLE NO. 26427 SAMPLE TYPE: SOIL
                                                           PROG ELEM: NSF COLLECTED BY: A SPAUGH
                                                                                                             * *
    SOURCE: CHAMPION INTERNATION
                                                           CITY: ORANGEBURG ST: SC
COLLECTION START: 06/02/88 STOP: 00/00/00
* *
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    STATION ID: SS-04
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                           SAS NUMBER:
**
    CASE NUMBER: 9702
                                                           D. NUMBER: J420
                                                                                                             * *
* *
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UG/KG
                  ANALYTICAL RESULTS
                                                           UG/KG
                                                                            ANALYTICAL RESULTS
   8.3U ALPHA-BHC
                                                            830 METHOXYCHLOR
   8.3U BETA-BHC
                                                            170
                                                                ENDRIN KETONE
   8.3U DELTA-BHC
                                                                CHLORDANE (TECH. MIXTURE) /1
  8.3UR GAMMA-BHC (LINDANE)
                                                            830
                                                                GAMMA-CHLORDANE
                                                                              /2
   8.30 HEPTACHLOR
                                                                ALPHA-CHLORDANE
                                                            830
   8.30
       ALDRIN
                                                           1 70U
                                                                TOXAPHENE
                                                                PCB-1016 (AROCLOR 1016)
PCB-1221 (AROCLOR 1221)
   8.30
       HEPTACHLOR EPOXIDE
                                                            83U
   8.3U ENDOSULFAN I (ALPHA)
                                                            830
                                                            83U PCB-1232 (AROCLOR 1232)
83U PCB-1242 (AROCLOR 1242)
    17U DIELDRIN
    17U 4.4'-DDE (P.P'-DDE)
                                                            83U PCB-1248 (AROCLOR 1248)
640 PCB-1254 (AROCLOR 1254)
    17U ENDRIN
    17U ENDOSULFAN II (BETA)
    17U 4.4'-DDD (P.P'-DDD)
                                                           170U PCB-1260 (AROCLOR 1260)
                                                             4 PERCENT MOISTURE
    17U ENDOSULFAN SULFATE
    17U 4.4'-DDT (P,P'-DDT)
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REMARKS

^{*}A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

^{*}K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN *U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

^{*}R-QC INDICATES THAT DATA UNUSABLE, COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION. *C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

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Scott Gardner, US EPA

345 Courtland St, N.E.

Atlanta, GA 30365

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. Article Addressed to:	4. Article Number
.	P 700 132 766
Mr. Ozzie Fogle	Type of Service:
Decolam, Incorporated	Registered Insured
P O Box 2126	☐ CoD
Orangeburg, S.C. 29116-2126	☐ Express Mall
and the second s	Always obtain signature of addressee
) "`	or agent and DATE DELIVERED.
Signature - Addressee	8. Addressee's Address (ONLY if requested and fee paid)
	requested and fee paid)
Signature - Agent	i i
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Date of Delivery MAY 2 3 1988	
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U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

MEMORANDUM

DATE:

SUBJECT:

SSI Study Plan, Champion International Corporation Facility,

Orangeburg, South Carolina

FROM:

James Gray Al

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

TO:

Narindar Kumar, Acting Chief

Site Assessment Section

Site Investigation and Support Branch

Waste Management Division

THRU:

M. D. Lair, Chief

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

The SSI Study Plan for the Champion International Corporation Facility in Orangeburg, South Carolina, has been reviewed. The study plan as presented has been found adequate to achieve the objectives stated in Section 1.1. I would, however, urge that an attempt be made to assess the ground water route.

Section 3.2, <u>Subsurface Soil Sampling</u> states that if conditions permit, the samples will be taken from the water table interface. It appears that the samplers are to advance boreholes as far as possible with a power auger or until saturated soil is achieved. It would seem feasible for the samplers to carry along temporary well points and well sampling equipment in case the subsurface soil borings did find ground water. That way, ground water samples could be obtained at the site.

Should you have any questions regarding my comments or require additional information, please call me at FTS 250-3353.

cc: Lair/Mundrick

Knight Blackwell



1927 LAKESIDE PARKWAY SUITE 614 TUCKER, GEORGIA 30084 404-938-7710

C-586-5-8-61

May 10, 1988

Mr. Robert Jourdan Site Investigation and Support Branch Waste Management Division Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, Georgia 30365

Subject:

Site Investigation Study Plan

Champion International Corporation

TDD No. F4-8801-06

Revision 0

Dear Mr. Jourdan:

Please find enclosed three copies of the study plan for the site investigation at the Champion International Corporation Facility in Orangeburg, South Carolina. If you should have questions regarding this investigation please contact me.

Very truly yours,

Ohn Brown

Approved

Miff. Blackey

Chris Brown Project Manager

CB/dw

Enclosures (3)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

ENVIRONMENTAL SERVICES DIVISION ATHENS, GEORGIA 30613

ME MORANDUM

DATE: May 12, 1988

Champion International Corporation, Orangeburg, S.C., SUBJECT:

SSI Study Plan

Pat Stamp, Laboratory Quality Control Specialist Fat Stamp Laboratory Evaluation & QA Section FROM:

TO: Narindar Kumar

Site Assessment Section

Site Investigation & Support Branch Waste Management Division

Wade Knight, Chief THRU:

Laboratory Evaluation & QA Section

We have reviewed the subject document and have no comments.

Site Inspection Date

May 31 -> June 3

STUDY PLAN
SITE SCREENING INVESTIGATION
CHAMPION INTERNATIONAL CORPORATION
ORANGEBURG, ORANGEBURG, SOUTH CAROLINA
EPA ID #: SCD003342177

Prepared Under TDD No. F4-8801-06 CONTRACT NO. 68-01-7346

Revision 0

FOR THE

WASTE MANAGEMENT DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

MAY 9, 1988

NUS CORPORATION SUPERFUND DIVISION

Prepared By

Reviewed By

Approved By

Chris Brown Project Manager

Assistant Regional

Project Manager

Murray/Warner, P.E.
Regional Project Manager

NOTICE

The information in this document has been funded wholly by the United States Environmental Protection Agency (EPA) under Contract Number 68-01-7346 and is considered proprietary to the EPA.

This information is not to be released to third parties without the expressed or written consent of the EPA.

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STUDY PLAN

SITE SCREENING INVESTIGATION

CHAMPION INTERNATIONAL CORPORATION

ORANGEBURG, ORANGEBURG, SOUTH CAROLINA

EPA ID #SCD003342177

TDD NO. F4-8801-06

1.0 INTRODUCTION

The NUS Corporation Region 4 Field Investigation Team (FIT) has been tasked by the U.S. Environmental Protection Agency (EPA), Waste Management Division to conduct a site screening investigation (SSI) at the Champion International Corporation Facility in Orangeburg County, South Carolina. The investigation will be performed under the authority of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The task will be performed to satisfy the requirements stated in Technical Directive Document (TDD) number F4-8801-06.

1.1 Objectives

The objectives of this sampling investigation are to collect information to assist in developing a site-specific preliminary HRS score and to determine if further investigation is required at this site.

Specific elements are:

- Obtain information to prepare a preliminary HRS
- Provide EPA the necessary information to make decisions on any other actions warranted at the site.
- Complete a Site Screening Investigation (SSI) Report.

1.2 Scope of Work

The scope of this investigation will include the following activities:

- Obtain and review background materials relevant to HRS scoring of site
- Obtain aerial photographs and maps of site, if possible
- Obtain information on local water systems
- Evaluate target population within a 4-mile radius of the site with regard to groundwater use, surface water use, and possibility of direct contact or fire and explosion hazard
- Conduct a survey of private wells
- Determine location and distance to nearest potable well
- Conduct a geophysical screening of site to determine whether buried drums may be present
- Collect up to 14 environmental samples consisting of surface soil, subsurface soil, surface water, and sediment.

1.3 Schedule

31

Week of May 23, 1988

1.4 Personnel

Chris Brown - Project Manager FIT 4 Team

1.5 Permits and Authorization Requirements

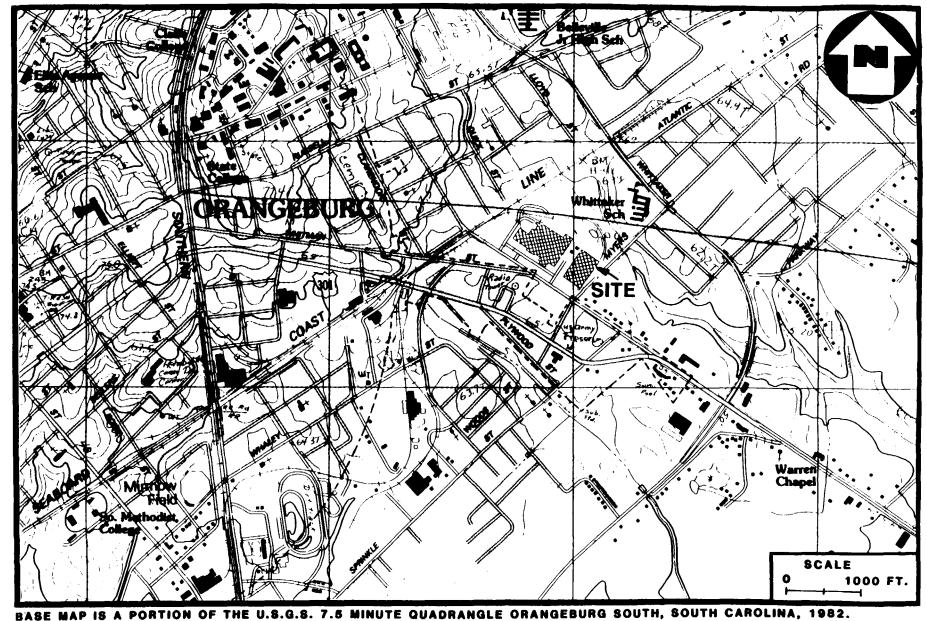
The EPA is responsible for obtaining access to the site and permission to take photographs of site. In addition, EPA is responsible for all permits which may be required to accomplish this task.

1.6 Site History and Description

The champion International Corporation is located at the corner of Five Chop Road and Meyers Road in Orangeburg, South Carolina (Figure 1-1). Orangeburg is situated in the south central portion of the state, approximately 45 miles south of Columbia. Champion International Corporation operated alternately under the name of U.S. Plywood. Currently, Georgia-Pacific owns the property and has shut down operations at the plant. Another business by the name of Decolam, Inc., is in operation on part of the property. Decolam business is a vinyl laminating plant, owned by former employees of Champion, and presided over by Mr. Ozzie Fogle, former vice president and general manager of Champion International (Ref. 1). An offsite reconnaissance was conducted by NUS in January, 1988. A fence surrounding the site and tight access restrictions resulted in little information concerning actual site conditions. Figure 1-2 shows the site layout as ascertained by topographic and city maps.

A Notification of Hazardous Waste Activity form was filed on August 15, 1980, and again on November 19, 1980, in order to change the status of Champion International from a facility which treats, stores, and disposes of hazardous waste to one which only generates hazardous waste (Ref. 2). A Notification of Hazardous Waste Site form was filed on June 9, 1981, describing the facility type as a landfill, with organics and solvents as the general type of waste (ref. 3). As of September 14, 1982, Champion International was listed as an interim status facility (Ref. 4). On October 31, 1983, the South Carolina Department of Health and Environmental Control (SCDHEC) granted Champion approval for the offsite disposal of pesticides and pesticide containers at the Orangeburg County Landfill. The chemicals were stored in 55 gallon drums at the Champion facility until their disposal at the landfill (Ref. 5).

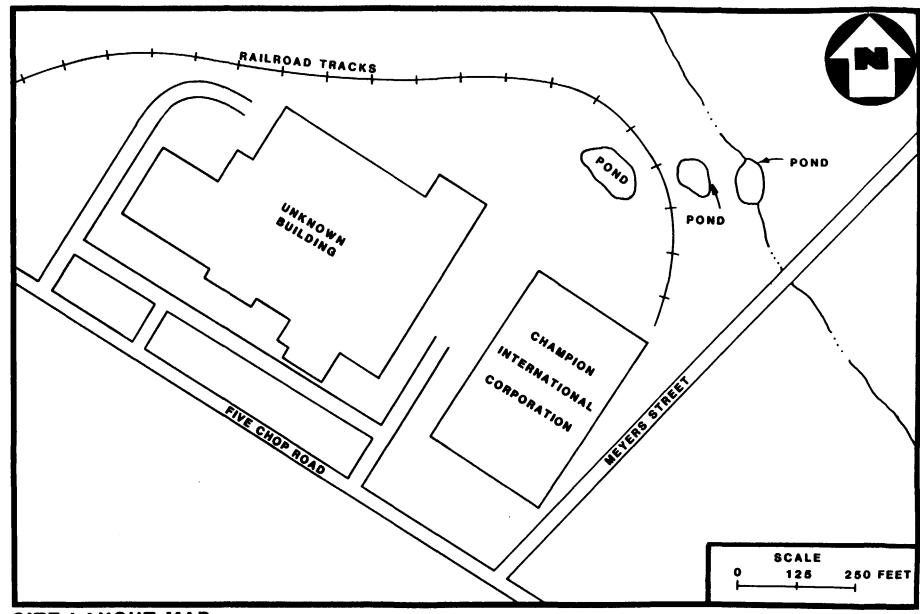
Champion International's disposal practices at the Orangeburg County Landfill were of great concern to SCDHEC in the early 1980's. Unsealed drums were transported to the landfill on several occasions, leaking liquids onto the ground (Ref. 6). Although this primarily



SITE LOCATION MAP CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, SOUTH CAROLINA

FIGURE 1-1





SITE LAYOUT MAP CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, SOUTH CAROLINA



FIGURE 1-2

impacts the county landfill, Champion's disposal practices may have resulted in spills on their own grounds before the transport of the drums.

The one persistent problem with Champion is a disposal area which is mentioned frequently in the file material. This disposal area is supposedly located along the back of the Champion facility. There is very little information on this area, but drums have been reportedly disposed there (Ref. 7).

The first mention of the disposal area in the file material is in 1974. Investigators from the Industrial Waste Section of SCDHEC saw several piles of wood scraps and a few 55-gallon drums. The plant manager stated that cleanup of the area should be finished by the end of that year (Ref. 7). An SCDHEC visit in 1982, however, again noted the presence of drums in the disposal area. The plant manager, Mr. Ozzie Fogle, was instructed to determine what was in the drums. SCDHEC also discovered that the plant was burning cured urea formaldehyde glue sludge in wood/fuel fired boilers, without district air personnel being aware of the practice (Ref. 8).

In 1986, SCDHEC sent a letter to Champion concerning the old drum site, once again urging an investigation of the matter. The letter also mentioned a cooling water basin located on the property near the dump area which may have used chromate cleaners in its operation. As late as May 14, 1987, no action had been taken to answer the questions presented by SCDHEC (Ref. 9).

1.7 Site Hydrogeology

Orangeburg, South Carolina is located in south-central South Carolina in the Middle Atlantic Coastal Plain Physiographic Province. The city of Orangeburg lies at the transitional zone between the outcrop areas of the McBean Formation in the Upper Coastal Plain and the Santee Limestone in the Lower Coastal Plain. The quartzose sands, calcareous clays and thin limestone of the McBean Formation interfinger with the fossiliferous, cherty, clauconitic, and dolomitic Santee limestone at this transition zone.

This zone is overlain with Pleistocene deposits of silt, sand, clay and gravel, and underlain by the Black Mingo, Peedee, Black Creek, and Middendorf aquifer systems, in descending order. The surficial Pleistocene aquifer, the Santee and the McBean aquifers of Tertiary age are unconfined aquifers in the Orangeburg area, with a water level of 40 feet below the land

surface (Ref. 10). These aquifers are separated from the underlying aquifers by layers of shale and clay in the upper part of the Black Mingo formation (Ref. 11). The Black Mingo, Peedee, Black Creek, and Middendorf are all confined aquifers in this area.

The Pleistocene deposits of silt, sand, clay and gravel are from 50 to 120 feet thick in the Orangeburg area. There are some private wells tapping this aquifer, but due to the high content of iron in the water at this depth, the number of wells is low (Ref. 10).

The Santee Limestone of the Tertiary Limestone Aquifer System is first encountered at 50 to 120 feet below land surface (Ref. 12). This formation has developed a secondary porosity from the enlargement of fractures and joints through solution with the water contained in the aquifer. Fissures, sinkholes and subterranean passageways in the porous limestone are infiltrated by rainfall during the recharge process, making it a very productive system.

The McBean Formation is part of the Tertiary Sand Aquifer System and consists of quartzose sands interbedded with clays. Both the McBean and the Santee occur at or near the land surface and are tapped by many wells with depths of approximately 90 to 300 feet (Ref. 11, 12, 13).

2.0 GEOPHYSICAL SCREENING

Little information concerning the drum disposal area is known. Therefore, geophysics will be attempted at the facility to aid in determining the location of the disposal area, its approximate boundaries and depth. Geophysical techniques to be employed at the site include magnetics and electromagnetics. Data points will not be land surveyed; however, a reference from the grid origin to a permanent structure onsite will be completed. A summary of the geophysical methods to be used at the site are presented in Appendix A.

3.0 SAMPLING INVESTIGATION

The sampling investigation will include the collection of up to 14 environmental samples. The focus of the sampling program will be to obtain samples from potential waste source areas outlined in Section 1.6. The emphasis of the investigation will be on the collection of surface water, sediment, surface soil, and subsurface soil samples. Given the nature of the geology, shallow groundwater is not expected to be encountered at the depths capable of being reached by gasoline powered hand auger. In addition, no private wells are expected

Jak Com

to be sampled. Reconnaissance of the site revealed that the nearest well is approximately two miles away and separated by Middle Pen Creek. A summary of the proposed sample locations and the number and types of samples to be collected shown in Figure 3-1 and Table 3-1, respectively. Analyses will be performed under the Contract Laboratory Program (CLP) and will include the target compound list (TCL).

It should be emphasized that the above mentioned sampling locations and the breakdown in the number and type of samples to be collected are proposed. It is possible that the locations and types of samples that will actually be collected may vary from the proposed schedule as more definitive information on site conditions becomes available.

3.1 Surface Water and Sediment Sampling

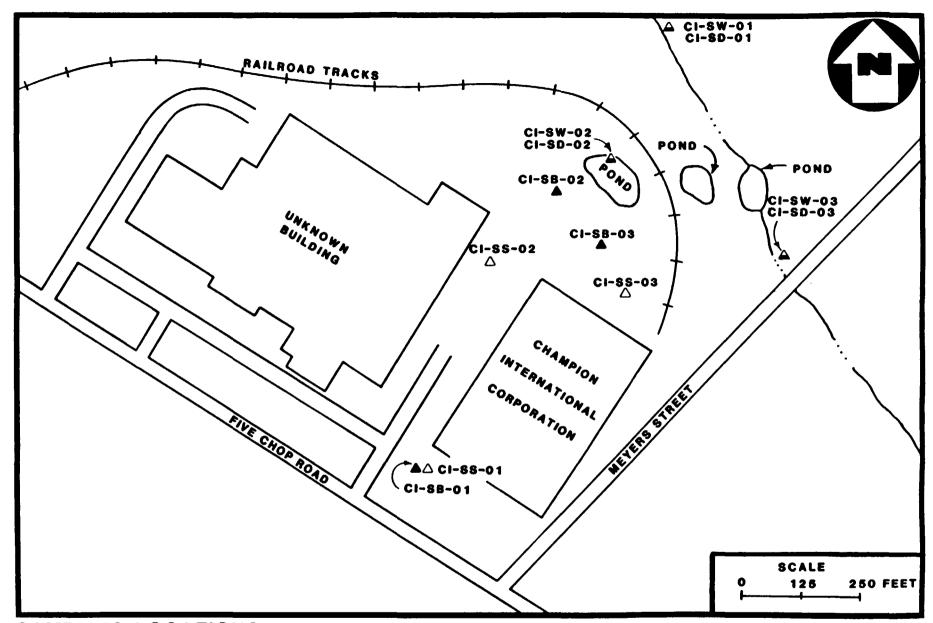
It is anticipated that a total of three sediment and surface water samples will be collected from the locations shown in Figure 3-1. These samples will characterize upstream conditions of MIddle Pen Creek and assess contamination to the onsite ponds.

3.2 Subsurface Soil Sampling

It is anticipated that three subsurface soil samples will be collected from the locations shown in Figure 3-1. These samples will be used to characterize upgradient and onsite subsurface soil conditions. Samples will be collected from boreholes advanced with a gasoline powered hand auger. If conditions permit the samples will be collected from the water table interface otherwise they will be collected from the vadose zone.

3.3 Suface Soil Sampling

Up to three surface soil samples will be collected. Two will be used to assess onsite conditions and will be taken from areas of stained or disclosed soil, if any. The remaining sample will be collected to establish background surface soil conditions.



SAMPLING LOCATIONS CHAMPION INTERNATIONAL CORPORATION ORANGEBURG, SOUTH CAROLINA

FIGURE 3-1



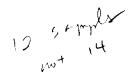


TABLE 3-1
SAMPLE CODE DESCRIPTIONS AND LOCATIONS

Sample Code	Description	Location
CI-SS-01	Surface Soil	Background sample
CI-SB-01	Subsurface Soil	Background sample
CI-SW-01	Surface Water	Background sample
CI-SD-01	Sediment	Background sample
CI-SW-02	Surface Water	Large pond in back of facility
CI-SD-02	Sediment	Large pond in back of facility
CI-SW-03	Surface Water	Downstream sample
CI-SD-03	Sediment	Downstream sample
CI-SB-02	Subsurface Soil	Drum disposal area
CI-SB-03	Subsurface Soil	Cooling water basin area
CI-SS-02	Surface Soil	Drum staging area
CI-SS-03	Surface Soil	Drum staging area

3.4 Analytical and Container Requirements

Sample containers used will be in accordance with the requirements specified in the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual; United States Environmental Protection Agency, Region IV, Environmental Services Division, April 1, 1986. The following is a description of the analysis and types of containers required.

<u>Analyses</u>	Container	<u>Preservatives</u>
Ext. Organics, Water	1 gal., amber glass*	None
Volatile Organics, Water	40 ml., glass vial*	4 drops conc. HCL to pH <2
Metals, Water	1 liter, plastic	50% HNO ₃ to pH < 2
Cyanide, Water	1 liter, plastic	NaOH to pH >12
Ext. Organics, Soil/Sediment	8 oz., glass*	None
Volatile Organics Soil/Sediment	4 oz., glass*	None
Inorganics, Soil/Sediment	8 oz., glass*	None

^{*}Sample container lids are lined with teflon.

^{**}Samples will be iced to 4°C.

3.5 Methodology

3.5.1 General

All sample collection, sample preservation, and chain-of-custody procedures used during this investigation will be in accordance with the standard operating procedures as specified in Section 3 and 4 of the <u>Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual</u>; United States Environmental Protection Agency, Region IV, Environmental Services Division, April 1, 1986.

All laboratory analyses and laboratory quality assurance procedures used during this investigation will be in accordance with standard procedures and protocols as specified in the <u>Analytical Support Branch Operations and Quality Assurance Manual</u>; United States Environmental Protection Agency, Region IV, Environmental Services Division; revised June 1, 1985 or as specified by the existing United States Environmental Protection Agency standard procedures and protocols for the contract analytical laboratory program.

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Appendix A

Geophysical Methodology

APPENDIX A SUMMARY OF GEOPHYSICAL METHODS

The following sections are from "Geophysical Techniques for Sensing Buried Wastes and Waste Migration" by Glaccum, R. A., and M. R. Noel, August, 1983, Technos, Inc., for Environmental Monitoring Systems Laboratory, ORD., USEPA, Las Vegas, Nevada.

RESISTIVITY

The resistivity method is used to measure the electrical resistivity of the geohydrologic section which includes the soil, rock, and ground water. Accordingly, the method may be used to assess lateral changes and vertical cross sections of the natural geohydrologic settings. In addition, it can be used to evaluate contaminant plumes and locate buried wastes at hazardous waste sites.

Application of the method requires that an electrical current be injected into the ground by a pair of surface electrodes. The resulting potential field (voltage) is measured at the surface between a second pair of electrodes. The subsurface resistivity can be calculated by knowing the electrode separation and geometry of the electrode positions, applied current, and measured voltage. (Resistivity is the reciprocal of conductivity, the parameter directly measured by the Electromagnetic (EM) technique).

In general, most soil and rock minerals are electrical insulators (highly resistive); hence the flow of current is conducted primarily through the moisture-filled pore spaces within the soil and rock. therefore, the resistivity of soils and rocks is predominantly controlled by the porosity and permeability of the system, the amount of pore water, and the concentration of dissolved solids in the pore water.

The resistivity technique may be used for "profiling" or "sounding". Profiling provides a means of mapping lateral changes in subsurface electrical properties. This field technique is well suited to the delineation of contaminant plumes and the detection and location of changes in natural geohydrologic conditions. Sounding provides a means of determining the vertical changes in subsurface electrical properties. Interpretation of sounding data provides the depth and thickness of subsurface layers having different resistivities. Commonly up to four layers may be resolved with this technique.

Applications of the resistivity method at hazardous waste sites include:

- Locating and mapping contaminant plumes;
- Establishing direction and rate of flow of contaminant plumes;
- Defining burial sites by
 - locating trenches,
 - defining trench boundaries,
 - determining the depths of trenches.
- Defining natural geohydrologic conditions such as
 - depth to water table or to water-bearing horizons,
 - depth to bedrock, thickness of soil, etc.

Most dry mineral components of soil and rock are highly resistive except for a few metallic ore minerals. Under most circumstances, the amount of soil/rock moisture dominates the measurement. Increased moisture decreases the resistivity value. Current flow is essentially electrolytic, being conducted by water contained within pores and cracks. A few minerals like clays actually contribute to conduction. In general, soils and rocks become less resistive as:

- Mositure or water content increases:
- Porosity and permeability of the formation increases:
- Dissolved solid and colloid (electrolyte) content increases;
- Temperature increases (a minor factor, except in areas of permafrost).

Very dry sand, gravel or rock as encountered in arid or semi-arid areas will have very high resistivity. As the empty pore spaces fill with water, resistivity will drop. Conversely, the resistivity of earth materials which occur below the water table but lack pore space (such as massive granite and limestone) will be relatively high and will be primarily controlled by current conduction along cracks and fissures in the formation. Clayey soils and shale layers generally have low resistivity values, due to their inherent moisture and clay mineral content. In all cases, an increase in the electrolyte, total dissolved solids (TDS) or specific conductance of the system will cause a marked increase in current conduction and a corresponding drop in resistivity. This fact makes resistivity an excellent technique for the detection and mapping of conductive contaminant plumes.

The operator must insure that adequate space is available at the site and that it is relatively clear of buried pipes and fences. Finding sufficient space for a long profile array with an overall length three to six times the depth of interest, or a sounding array with an overall length nine to twelve times the depth of interest can sometimes be a problem.

Although resistivity sounding methods are primarily intended for use in uniformly layered geological conditions, useful data may be obtained from the complex subsurface conditions often found at HWS. With both profiling and sounding techniques, inhomogeneities in the near-surface soils may introduce noise in the data. Some surface conditions such as dry surface materials, concrete roads or parking lots may preclude the use of the resistivity method.

The resistivity method is inherently limited to station measurements, since electrodes must in physical and electrical contact with the ground. This requirement makes the resistivity method slower than a non-contact method such as EM.

Capabilities

- Resistivity profiling techniques can be used to detect and map contaminant plumes and changes in geohydrology.
- Resistivity sounding methods can estimate the depth, thickness and resistivity of subsurface layers, or depth to the water table.
- Both profiling and sounding data can be evaluated qualitatively or semi-quantitatively in the field.
- Resistivity values can be used to identify the probable geologic composition of a layer or to
 estimate the specific conductance of a plume.
- Depth to bottom of landfills and large burial sites can sometimes be estimated.

Limitations

- The sounding technique requires that site conditions be relatively homogeneous laterally.
- The method is susceptable to noise cause by nearby fences, pipes and geologic scatter, which may interface with usefulness of the data.
- Quantitative interpretation requires the use of master curves and/or computer programs, and experience in their use.

ELECTROMAGNETICS (EM)*

The electromagnetic (EM) method provides a means of measuring the electrical conductivity of subsurface soil, rock, and ground water. Electrical conductivity is a function of the type of soil and rock, its porosity, its permeability, and the fluids which fill the pore space. In most cases the conductivity (specific conductance) of the pore fluids will dominate the measurement. Accordingly, the EM method is applicable both to assessment of natural geohydrologic conditions and to mapping of many types of contaminant plumes. Additionally, trench boundaries, buried wastes and drums, as well as metallic utility lines can be located with EM techniques.

Natural variations in subsurface conductivity may be caused by changes in soil moisture content, ground water specific conductance, depth of soil cover over rock, and thickness of soil and rock layers. Changes in basic soil or rock types, and structural features such as fractures or voids may also produce changes in conductivity. Localized deposits of natural organic, clay, sand, gravel, or saltrich zones will also affect subsurface conductivity.

*The term electromagnetic has been used in contemporary literature as a descriptive term for other geophysical methods, including GPR and metal detectors which are based on electromagnetic principles. However, this document will use electromagnetic (EM) to specifically imply the measurement of subsurface conductivities by low-frequency electromagnetic induction. This is in keeping with the traditional use of the term in the geophysical industry from which the EM methods originated. While the authors recognize that there are many electromagnetic systems and manufacturers, the discussion in this section is based solely on instruments which are calibrated to read in electrical conductivity units and which have been effectively and extensively used at hazardous waste sites. There is only one manufacturer of such instruments at the time of this writing.

Many contaminants will produce an increase in free ion concentration when introduced into the soil or ground water systems. This increase over background conductivity enables detection and mapping of contaminated soil and ground water at Hazardous Waste Sites (HWS), landfills, and impoundments. Large amounts of organic fluids such as diesel fuel can displace the normal soil moisture, causing a decrease in conductivity which may also be mapped, although this is not commonly done. The mapping of a plume will usually define the local flow direction of

contaminants. Contaminant migration rates can be established by comparing measurements taken at different times.

The absolute values of conductivity for geologic materials (and contaminants) are not necessarily diagnostic in themselves, but the variations in conductivity, laterally and with depth, are significant. It is these variations which enable the investigator to rapidly find anomalous conditions.

Since the EM method does not require ground contact, measurements may be made quite rapidly. Lateral variations in conductivity can be detected and mapped by a field technique called profiling. Profiling measurements may be made to depths ranging from 0.75 to 60 meters. The data is recorded using strip chart and magnetic tape recorders. This continuous measurement allows increased rates of data acquisition and improved resolution for mapping small geohydrologic features. Further, recorded data enhanced by computer processing has proved invaluable in the evaluation of complex hazardous waste sites. The excellent lateral resolution obtained from EM profiling datas has been used to advantage in efforts to outline closely-spaced burial pits, to reveal the migration of contaminants into the surrounding soil, and to delineate fracture patterns.

Vertical variations in conductivity can also be detected by the EM method. A station measurement technique called sounding is employed for this purpose. Data can be acquired from depths by combining results from a variety of EM instruments, each requiring different field application techniques. Other EM systems are capable of sounding to depth of one-thousand feet or more, but have not yet been used at HWS and are not adaptable to continuous measurements.

Profiling is the most cost-effective use of the EM method. Continuous profiling can be used in many applications to increase resolution, data density, and permit total site coverage at critical sites.

At HWS, applications of EM can provide:

- Assessment of natural geohydrologic conditions;
- Locating and mapping of burial trenches and pits containing drums and/or bulk wastes;
- Determination of flow direction in both unsaturated and saturated zones;
- Rate of plume movement by comparing measurement taken at different times;
- Locating and mapping of utility pipes and cables which may affect other geophysical measurements, or whose trench may provide a permeable pathway for contaminant flow.

Although there is available a wide variety of EM equipment, most of it is intended for geophysical exploration of mineral deposits. These units have not been used at HWS and do not provide a simple conductivity reading. This document discusses only those instruments which are designed and calibrated to read directly in units of conductivity.

Conductance is measured with electronic instrumentation consisting of a transmitter coil and receiver coil. The transmitter coil radiates an electromagnetic field which induces eddy currents in the earth below the instrument. Each of these eddy current loops, in turn, generates a secondary electromagnetic field which is proportional to the magnitude of the current flowing within that loop. A part of the secondary magnetic field from each loop is intercepted by the receiver coil and produces an output voltage which (within limits) is linearly related to subsurface conductivity. This reading is a bulk measurement of conductivity, e.g., the cumulative response to subsurface conditions ranging all the way from the surface to the effective depth of the instrument.

The sampling depth of EM equipment is related to the instrument's coil spacing. Instruments with coil spacings of one, four, ten, twenty, and forty meters are commercially available. The nominal sampling depth of an EM system is taken to be approximately 1.5 times the coil spacing.

The EM sounding method can rarely identify more than two or three layers with reasonable confidence. The greater the contrast in the conductivity values of each layer, the better the results. Often, the more detailed resistivity sounding method is used to complement EM profiling data.

The results of sounding analysis are usually presented as a vertical section, in which the conductivity layers are identified as a function of depth. The analyst may be able to correlate these layers to geohydrologic units believed to exist at the site.

Although the EM technique can be used for profiling or sounding, profiling is the most effective use of the EM method. Profiling makes possible the rapid mapping of subsurface conductivity changes, and the location, delineation, and assessment of spatial variables resulting from changes in the natural setting or from many contaminants.

EM is a very effective reconnaissance tool. The use of qualitative non-recorded data can provide initial interpretation in the field. If site conditions are complex, the use of a high-density survey grid, continuously-recording instruments, and computer processing may be necessary, in order to properly evaluate subsurface conditions. When continuously-recording instruments are used, total site coverage is feasible. More quantitative information can be obtained by using conductivity data from different depth ranges. At present, three different systems must be used to acquire data from 0.75 to 60 meters. Very often, however, data from two standard depths, e.g. six and fifteen meters, is adequate to furnish depth information.

Capabilities

- The EM profile method permits rapid data acquisition, resulting in high-density and high-resolution surveys.
- Profiling data may be acquired from various descrete depths, ranging from 0.75 meters to 60 meters.
- Continuously-recording instruments (to fifteen meter depth) can increase survey speed,
 density, and resolution permitting total site coverage, if required.
- EM reads directly in conductivity units (mm/m) permitting use of raw data in the field, and correlation to specific conductance of ground water samples.
- EM can map local and general changes in the natural geohydrologic setting.
- EM can detect and measure the boundaries of a conductivity plume.
- Direction of plume flow can be determined from an EM conductivity map.
- EM measurements taken at different times can provide the means to compute movement rates of conservative contaminants.
- EM can detect and map burial pits and trenches of both bulk and drummed wastes.
- EM can detect and map the location of buried metallic utility lines.

Limitations

- EM has less sounding (vertical) resolution than the resistivity method due to its limited number
 of depth intervals.
- The acquisition of data from depths of 0.75 to 60 meters requires the use of three different EM systems.
- Continuous data can be obtained only to depths up to approximately fifteen meters.
- An EM measurement is influenced by the shallower materials more than the deeper ones; this
 must be considered when evaluating the data.
- EM measurements become non-linear in zones of very high conductivity.
- The EM method is susceptible to noise from a number of sources, including natural atmospheric noise, powerlines, radio transmitters, buried metallic trash, pipes, cables, nearby fences, vehicles, and buildings.

MAGNETOMETER

Magnetic measurements are commonly used to map regional geologic structure and to explore for minerals. They are also used to locate pipes and survey stakes or to map archeological sites. They are commonly used at HWS to locate buried drums and trenches.

A magnetometer measures the intensity of the earth's magnetic field. The presence of ferrous metals creates variations in the local strength of that field, permitting their detection. A magnetometer's response is proportional to the mass of the ferrous target. Typically, a single drum can be detected at distances up to six meters, while massive piles of drums can be detected at distances up to twenty meters or more.

Some magnetometers require the operator to stop and take discrete measurements; other instruments permit the acquisition of continuous data as the magnetometer is moved across the site. This continuous coverage is much more suitable for high resolution requirements and the mapping of extensive areas.

The effectiveness of a magnetometer can be reduced or totally inhibited by noise or interference from time-variable changes in the earth's field and spatial variations caused by magnetic minerals in the soil, or iron and steel debris, ferrous pipes, fences, buildings, and vehicles. Many of these problems can be avoided by careful selection of instruments and field techniques.

At HWS, magnetometers may be used to:

- Locate buried steel containers, such as 55-gallon drums;
- Define boundaries of trenches filled with ferrous containers;
- Locate ferrous underground utilities, such as iron piles or tanks, and the permeable pathways
 often associated with them;
- Select drilling locations that are clear of buried drums, underground utilities, and other obstructions.

A magnetometer measures the intensity of the earth's magnetic field. Variations in this field may be caused by the natural distribution of iron oxides within the soil and rock or by the presence of buried iron or steel objects. (The magnetometer does not respond to nonferrous metals such as aluminum, copper, tin, and brass).

The earth's magnetic field behaves much as if there were a large bar magnet embedded in the earth. Although the earth's field intensity varies considerably throughout the United States, its average value is approximately 50,000 gammas.* The angle of the magnetic field with respect to the earth's surface also varies. In the U.S., this angle of inclination ranges approximately sixty to seventy-five degrees from the horizontal.

The intensity of the earth's magnetic field changes daily with sunspots and ionospheric conditions which can cause large and sometimes rapid variations. With time, these variations produce unwanted signals (noise) and can substantially affect magnetic measurements.

If the magnetic properties of the soil and rock were perfectly uniform, there would be no local magnetic anomalies; however, a concentration of natural iron minerals, or a buried iron object, will cause a local magnetic anomaly which can be detected at the surface.

Typical magnetic anomalies at HWS will range from one to hundreds of gammas for small discrete targets, depending on their depth. Massive piles of buried drums will result in anomalies of from one-hundred to one-thousand gammas or more.

*The unit of magnetic measurement is the gamma. Recently, the gamma unit has been renamed the Nano Tesla. At this time, most instruments are still labeled in gammas, as are specification sheets, existing literature, and field data; hence all references to magnetic data in this document are expressed in gammas.

While several factors influence the response of a magnetometer, the mass of a buried target and its depth are the most important. A magnetometer's response is directly proportional to the mass of ferrous metal present and varies by one over the distance cubed (1/d³) for total measurements. If a gradiometer is used, the response falls off even faster, as one over the distance to the fourth power (1d⁴). With sensors of equal sensitivity, the total field system provides the greater working range. Typically a single drum can be detected at distances up to six meters or more. There is a wide variety of magnetometers available commercially; specific performance is highly dependent upon the type of magnetometer and the field conditions. Theoretically, the number of drums may be calculated, however, such results should be considered only approximations because of the number of variables associated with targets, site conditions, and calculations. Actual results may vary considerably.

A magnetometer with continuous recording capabilities can be used to produce a strip chart of the field data, which is helpful in assessing signal-to-noise ratio, anomaly shape, target location, and provides a means of exercising quality control over field data. This continuous coverage is much more suitable for high-resolution requirements and the mapping of extensive areas.

The effectiveness of a magnetometer can be reduced or totally inhibited by noise or interference from time-variable changes in the earth's field and spatial variations caused by magnetic minerals in the soil, or iron and steel debris, ferrous pipes, fences, buildings, and vehicles. Many of these problems can be avoided by careful selection of instruments and field techniques.

Capabilities

- Magnetometers respond to ferrous metals (iron or steel) only.
- Individual drums can be detected at depths up to six meters.
- Large masses of drums can be detected at depths of six to twenty meters.
- Magnetometers can provide a greater depth range than metal detectors.
- Interpretation of their data may be used to provide estimates of the number and depth of buried drums.
- They can provide a continuous response along a traverse line.
- They may be mounted on vehicles for coverage of a large site.

Limitations

- In general, magnetometers are susceptible to noise from many different sources, including steel fences, vehicles, buildings, iron debris, natural soil minerals, and underground utilities.
- Low cost units are limited in depth range (but their limitations make them insensitive to many of the above sources of noise).
- Total field instruments are also sensitive to fluctuations in the earth's magnetic field which can seriously affect data.
- Data is of limited use in determining the number and depth of targets.
- Complex site conditions may require the use of highly skilled operators, special equipment,
 and the recording and processing of data, along with skilled interpretation.

SEISMIC REFRACTION

<u>Introduction</u>

Seismic refraction techniques are used to determine the thickness and depth of natural layers of soil and rock and the travel time or velocity of seismic waves within the layers. Seismic refraction methods are often used to determine depths to specific horizons such as bedrock, clay layers, and water table. In addition to mapping natural features, additional secondary applications of the seismic method include the location and deleniation of the extent of burial pits and trenches at hazardous waste sites (HWS).

Seismic waves transmitted into the subsurface travel at different velocities depending upon the type of wave. Each type of wave in turn travels at difference velocities in various types of soil and rock of different densities and are refracted (or bent) at the interfaces between layers. Such refraction affects the seismic wave path of travel. An array of geophones implanted in the surface measures the travel time of the different seismic waves from the source of seismic disturbances to the geophones located at a predetermined number and interval of spacings. The time required for a specific wave type to complete this path is measured, permitting a determination to be made of the seismic velocity of each layer, the thicknesses of the layers and their depths, as well as the number of layers. The wave velocity in each layer is directly related to its material properties such as density and hardness.

A seismic source, an array of geophones, and a seismograph are required to make the field measurements. The seismic source may be a simple sledge hammer with which to strike the ground or explosives and any other seismic sources (such as natural earthquakes may be utilized for deeper or special applications. Geophones implanted in the surface of the ground translate the received vibrations of seismic energy into electrical signals. This signal is displayed on the seismograph, permitting measurement of the arrival time of a specific seismic wave type. Since the seismic refraction method measures ground vibrations of small magnitude, it is inherently susceptible noise from a variety of natural and cultural sources.

At HWS, seismic refraction can be used to define natural geohydrologic conditions, including thickness and depth of soil and rock layers, their physical properties such as density. Density in turn is related to composition, and density differences such as depth to bedrock or water table can be detected. It can also be used for the detection and location of features with anomalous density

distributions relative to the surrounding medium such as pits and trenches, and for evaluation of the excavated depth of burial site or landfills.

Principles

Although a number of elastic waves are inherently associated with the method, conventional seismic refraction methods that have been employed at HWS are concerned primarily with the compressional wave (primary or P-wave). The compressional wave is also the first to arrive at the seismic station which makes its unique identification relatively easy.

P-waves propagate through subsurface layers through many different travel paths. the density of a layer and its elastic properties determine the velocity at which the seismic P-wave will travel through the layer. The porosity, mineral composition, and water content of the layer affect both its density and elasticity. A seismic sensor (geophone) detects the direct P-wave as it moves parallel along the top of the surface layer. The time of travel along this path is related to the distance between the sensor and the source and the material composing the layer.

If a layer of higher density, such a bedrock, occurs beneath a surface layer, a seismic wave propagating through the higher-density material will have a higher velocity. As a result, some of the seismic waves will be bent or refracted at the interface as they enter the bedrock. This phenomenon is similar to the refraction of light rays when light passes from a less dense medium, air, into more dense medium, water, and is described by Snell's law. One of these refracted P-wave fronts, crossing the interface at a critical angle, will move parallel to the top of the bedrock along the interface at a greater velocity equal to the bedrock velocity.

The seismic P-wave traveling along this interface will continually disperse energy back into the upper layer through refraction. These refracted P-waves may then be detected in the surface layer at various distances from the seismic source.

Beyond a certain distance (called the critical distance), the refracted P-wave will arrive at a geophone before the direct P-wave. This happens, even though the refraction path is longer than the direct path, because a sufficient portion of the wave's path occurs in the higher velocity bedrock allowing the refracted wave to surpass the direct wave front. Measurement of these first arrival times and their distances from the source permits calculation of layer velocities, thicknesses, and depth to bedrock. Application of the refraction seismic method is generally limited to resolving three to four layers.

The preceding concepts are based upon the fundamental assumptions that:

- 1. Seismic velocitis of geologic layers must increase with depth. This requirement is generally met at most sites.
- 2. Layers must be sufficient thickness to permit detection, given the time scale of seismograph in milliseconds.
- 3. Seismic velocities of layers must be sufficiently different to permit resolution of individual layers beyond seismic noise from natural and cultural sources.

Factors to be Considered for Field Use

The seismic line must be centered over the required area of interest and overall line length must be three to five times longer than the maximum depth of interest. Resolution is determined by the geophone spacing. Spacings of 3 to 15 meters are commonly used in many applications; however, closer spacings may be necessary for very high resolution in determining depth of shallow soil and geologic sections.

Repetition of seismic refraction lines along a grid will reveal lateral variations as well as vertical variations. Resulting data can be used to indicate trends of dipping layers and to detect anomalous conditions, such as clay seams, fractures, disturbed fault zones, thickness of soil mantle to bedrock, as well as the depth position of the water table.

Since the seismic refraction method measures compressional ground vibration, it is inherently sensitive to background noise from a variety of sources. Single enhancement and filtering is a significant aid when working in noisy areas and with small energy sources. Enhancement capability is available in most single and multi-channel seismomether systems. Enhancement is accomplished by adding a number of seismic signals from repeated hammer blows of similar force. The coherent seismic signal is increased in direct proportion to the number of blows, and the energy of each blow while random noise in the seismic signal is increased only by the square root of the number of blows, this causes the seismic signal to "grow" out of the background noise level, permitting detection of seismic waves significantly above noise level when operating in seismically noise environments and when employing greater distances between source and geophones. The overall results provide a more precise measurement of the first arrival time for P-waves because their resolution has been

enhanced by varying such field parameters as distance between source and geophones and energy of seismic source.

Depending on site conditions, a hammer is useful for obtaining seismic data to depths of 10 to 15 meters, while a 250-kilogram (500-pound) drop weight is required for depths of 50 to 100 meters. A more powerful seismic source is necessary to obtain deeper data or for work in noise areas. Many sources are available for meeting specialized needs. If the use of explosives or projectile sources is contemplated, the project manager must consider the safety hazards inherent in such methods, as well as their impact on the hazardous site itself, and the response from the surrounding neighborhood. Local laws, insurance requirements and the increase in project cost associated with compliance may also restrict the use of explosives.

Quality Control

Quality control can be achieved in several ways:

- A check of the seismic signal and noise conditions of the instrument display will verify the proper functioning of geophones and trigger cables and the correct range setting of the instrument for a given energy input. A gain setting on the seismometer must be selected that in not overwhelmed by the seismic source but within the optimum sensitivity range of the seismograph to a low resolution of the seismic signal above the seismic noise.
- In cases where paper records are not made, seismic arrival times must be visually picked from the electronic display and immediately plotted on a T/D graph in the field. Problems with improper picks are often discovered by early inspection of these plots. This will also allow determination of proper range scale and a check on the sensitivity range of the instruments.
- If the data is to be used for legal purposes, or if it must be reviewed by persons other than the field party chief, a hard copy of the data must be made. Multi-channel systems provide a much better means of presenting and documenting the data than do single-channel units. They also provide greater resolution and sensitivity. The individual travels of the single-channel systems have to be clopped and pasted together and provides a much less acceptable-looking and workable record. For simple, smaller

surveys, however, the single-channel units can be satisfactory when used by experienced personnel.

- e Background or off-site data is often required for correlation with known geologic information and to establish clean background noise level. Such background information is also useful as a reference for evaluating complex site conditions.
- Boring logs should be obtained to minimize the possibility that low velocity (hidden layers) or thin beds will remain undetected.
- Electronic calibration of the timing circuits of the seismograph may be done in the laboratory. However, this is rarely necessary because these timing circuits are crystalcontrolled and have inherently low signal drift. Normal annual factory maintenance includes such calibration.
- The seismic system may also be run at a standard base station for periodic check of the instrument operation.

Noise

Seismic signals are strongly affected by ground vibration noise; less so be geologic scatter. In addition, the subjective pick of first arrival times can contribute a few milliseconds of error to timing intervals.

Unwanted vibrations that affect the seismic signal at he geophone may be caused by:

- Strong winds which move nearby trees;
- Sounds of airplanes;
- Surface sources, such as moving vehicles on nearby highways and railroads;
- Field crews walking near geophones;
- Nearby blasting or operation of heavy construction equipment;

Micro-earthquakes

Geologic scatter may be caused by lateral variation in layer composition, irregular interface between layers, or a less dense layer occurring below a more dense layer. Such scatter can complicate interpretation of the T/D polt, but is also a valuable indicatory of site conditions.

Examples include:

- Variations in the thickness of the "soil zone";
- Boulders in glacial clay or till;
- Zones of increased cementation in sandstone and limestone;
- Lenses of sand in clay layers;
- Variations in saturated water content caused by perched water tables;
- irregular bedrock surfaces;
- Limestone containing numerous solution cavities.
- Solution cavities filled in with material at different density.

Summary

The seismic refraction method can be used as an aid in defining natural geohydrologic conditions, including thickness and depth of soil and rock layers, and depth to bedrock or water table. Generally, two or three layers system can be analyzed in the field by the use of seismic refraction nomograms and simple calculations. More complicated sites having three to four layers with dip will require a programmable calculatory or a small computer to solve the seismic equations.

Since seismic velocity is directly related to a material properties of the layer such as density and hardness, lateral variations in composition or an irregular interface between layers will show up as geologic scatter on a T/D plot. This is a valuable indicator of variations and anomalous conditions in site conditions. The analysis of this data requires that the interpreter be knowledgeable about the



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C-586-4-8-47

April 7, 1988

Mr. Robert Jourdan
Site Investigation and Support Branch
Waste Management Division
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Date:		
Site Disposition:	Med	
EPA Project Manager:		

Subject:

Preliminary Reassessment

Champion International Corporation
Orangeburg, Orangeburg, South Carolina

EPA ID No. SCD003342177 TDD No. F4-8801-06

Dear Mr. Jourdan:

FIT 4 conducted a preliminary reassessment of the Champion International Corporation facility in Orangeburg, Orangeburg County, South Carolina. The assessment included a comprehensive review of EPA and state file material, completion of a target survey, and an offsite reconnaissance of the facility and the surrounding area.

Champion International Corporation operated alternately under the name of U.S. Plywood. Currently, Georgia-Pacific owns the property and has shut down operations at the plant. Another business by the name of Decolam, Inc., is in operation on part of the property. The new business is a vinyl laminating plant, owned by former employees of Champion, and presided over by Mr. Ozzie Fogle, former vice president and general manager of Champion International (Ref. 1).

A Notification of Hazardous Waste Activity form was filed on August 15, 1980, and again on November 19, 1980, in order to change the status of Champion International from a facility which treats, stores, and disposes of hazardous waste to one which only generates hazardous waste (Ref. 2). A Notification of Hazardous Waste Site form was filed on June 9, 1981, describing the facility type as a landfill, with organics and solvents as the general type of waste (Ref. 3). As of September 14, 1982, Champion International was listed as an interim status facility (Ref. 4). On October 31, 1983, the South Carolina Department of Health and Environmental Control (SCDHEC) granted Champion approval for the offsite disposal of pesticides and pesticide containers at the Orangeburg County Landfill. The chemicals were stored in 55 gallon drums at Champion until their disposal at the landfill (Ref. 5).

Champion International's disposal practices at the Orangeburg County Landfill were of great concern to SCDHEC in the early 1980's. Unsealed drums were transported to the landfill on several occasions, leaking liquids onto the ground (Ref. 6). Although the primary concern in this case would be the county landfill, Champion's disposal practices may have resulted in spills on their own grounds before the transport of the drums.

Mr. Robert Jourdan Environmental Protection Agency TDD No. F4-8801-06 April 7, 1988 - Page 2

The one persistent problem with Champion is an old dump area which is mentioned frequently in the file material. This dump is on the property of Champion, near the rear. There is very little information on this area, but drums have been disposed there (Ref. 7).

The first mention of the old drum disposal area in the file material is in 1974. Investigators from the Industrial Waste Section of SCDHEC saw several piles of wood wastes and a few 55-gallon drums. The plant manager stated that cleanup of the area should be finished by the end of that year (Ref. 7).

In 1982, SCDHEC visited the plant again. Drums were still in the dump area. The plant manager, Mr. Ozzie Fogle, was instructed to determine what was in the drums. SCDHEC also discovered that the plant was burning cured urea formaldehyde glue sludge in wood/fuel fired boilers, without district air personnel being aware of the practice (Ref. 8).

In 1986, SCDHEC sent a letter to Champion concerning the old drum site, once again urging an investigation of the matter. The letter also mentioned a cooling water basin located on the property near the dump area which may have used chromate cleaners in its operation. As late as May 14, 1987, no action had been taken to answer the questions that SCDHEC had asked (Ref. 9). A further investigation is necessary to obtain definitive information about this onsite disposal area.

Orangeburg, South Carolina is located in south-central South Carolina in the Middle Atlantic Coastal Plain Physiographic Province. The city of Orangeburg lies at the transitional zone between the outcrop areas of the McBean Formation in the Upper Coastal Plain and the Santee Limestone in the Lower Coastal Plain. The quartzose sands, calcareous clays and thin limestone of the McBean Formation interfinger with the fossiliferous, cherty, glauconitic, and dolomitic Santee limestone at this transition zone.

This zone is overlain with Pleistocene deposits of silt, sand, clay and gravel, and underlain by the Black Mingo, Peedee, Black Creek, and Middendorf aquifer systems, in descending order. The surficial Pleistocene aquifer, the Santee and the McBean aquifers of Tertiary age are unconfined aquifers in the Orangeburg area, with a water level of 40 feet below the land surface (Ref. 10). These aquifers are separated from the underlying aquifers by layers of shale and clay in the upper part of the Black Mingo formation (Ref. 11). The Black Mingo, Peedee, Black Creek, and Middendorf are all confined aquifers in this area; therefore, they are not of concern in this investigation.

The Pleistocene deposits of silt, sand, clay and gravel are from 50 to 120 feet thick in the Orangeburg area. There are some private wells tapping this aquifer, but due to the high content of iron in the water at this depth, the number of wells is low (Ref. 10).

The Santee Limestone of the Tertiary Limestone Aquifer System is first encountered at 50 to 120 feet below land surface (Ref. 12). This formation has developed a secondary porosity from the enlargement of fractures and joints through solution with the water contained in the aquifer. Fissures, sinkholes and subterranean passageways in the porous limestone are infiltrated by rainfall during the recharge process, making it a very productive system.

The McBean Formation is part of the Tertiary Sand Aquifer System and consists of quartzose sands interbedded with clays. Both the McBean and the Santee occur at or near the land surface and are tapped by many wells with depths of approximately 90 to 300 feet (Ref. 11, 12, 13).

Mr. Robert Jourdan Environmental Protection Agency TDD No. F4-8801-06 April 7, 1988 - Page 3

The Orangeburg municipal water system uses surface water from the North Edisto River to supply the majority of residents in Orangeburg with water. There is, however, a significant population who use private wells for their drinking water (Ref. 14).

Surface water has a high potential for contamination since the Middle Pen Creek is directly behind the facility. Further south of Orangeburg the creek becomes a swamp. This surface water is not connected to the North Edisto River, which supplies the municipal system in Orangeburg (Ref. 15).

Carolina Bays, undrained shallow depressions with an elliptical or ovate shape, are located throughout the Orangeburg area. These bays are home to many sorts of wildlife and are considered sensitive environments (Ref. 11).

There is a potential hazard to the air quality in the industrialized area surrounding the Champion facility. The documented sloppiness of their disposal practices may have resulted in spillage of the urea formaldehyde glues and solvents which were stored at the facility until transport. There is an additional potential for a fire hazard, due to the ignitability of the solvents.

There is a school immediately behind the Champion International facility, within 500 feet, and several houses within a few hundred feet of the facility which could be immediately affected by an air or fire hazard at the plant (Ref. 15). Due to the lack of information available about the onsite drum disposal area, and Champion's reluctance to resolve the matter, the waste quantity and toxicity/persistence levels have been maximized for the evaluation of this facility.

Based upon the enclosures, the uncertainty of the nature of the old drum disposal area, the previous careless disposal practices, and the potential for contamination of the air and the surface waters, a site screening investigation is recommended on a medium priority basis. If you have any questions concerning this matter, feel free to contact me at NUS Corporation.

Approved

Very truly yours,

Geologist

JH/gwn

Enclosures (2)

cc: Scott Gardner

REFERENCES

- 1. Memo from James Burckhalter, Aiken Environmental Quality Control (EQC), to Jerri Higgins, March 9, 1988. RE: Current status of Champion International facility.
- 2. EPA file material, Notification of Hazardous Waste Activity form, Fred Rigden, operations manager, Champion International Corporation, August 15, 1980.
- 3. EPA file material, Notification of Hazardous Waste Site form, Richard C. Wigger, Vice President, Champion International Corporation, June 9, 1981.
- 4. EPA file material, Preliminary Assessment form, Debbie Browning, SCDHEC, September 14, 1982.
- 5. EPA file material, Letter from Joe Grant, SCDHEC, from Kurt J. Penney, Champion International Corporation, October 31, 1980.
- 6. EPA file material, Letter from James Burckhalter, Aiken EQC, to Ozzie Fogle, Champion Building Products, August 27, 1981.
- 7. EPA file material, Memo from Randall French, consultant, to Charles Kelly, manager, Industrial Waste Section, SCDHEC, September 17, 1974.
- 8. EPA file material, Memo from James Burckhalter, Aiken EQC, to Ed Gibson, Solid and Hazardous Waste Section, SCDHEC, June 21, 1982.
- 9. EPA file material, Memo from James Burckhalter, Aiken EQC, to John Cain, Solid and Hazardous Waste Section, SCDHEC, May 14, 1987.
- 10. Ackerman, G.W., owner, Ackerman-Carolina Drilling Company. Personal communication with Jerri Higgins, NUS Corporation, March 24, 1988. RE: Depth to water table in Orangeburg, S.C.
- 11. Siple, G.E., Groundwater Resources of Orangeburg County, South Carolina, 1975, P. 37, 10, 11.
- 12. Berry, Thomas F., owner, Berry Drilling Company. Personal communication with Jerri Higgins, NUS Corporation, March 23, 1988. RE: Aquifers and depth to water table in Orangeburg, S.C.
- 13. South Carolina Water Assessment, South Carolina Water Resources Commission, 1983, P. 263, 74.
- 14. Higgins, Jerri, Field Notes, Log Book # F4-623, January 13, 1988.
- 15. Topographic Quadrangle: Orangeburg South, S.C., 1982.

HATTEL RANKING BYETEM GEORING EDMONRY

SOR

COMMINITERMATIONAL COMPORATION
TOW SITE WHERE ECLOSEDARY
THREELES THREE ECLOSES
EPA RESION: 9

SCIRE STATUS: IN PREPARATION

SCORED BY JERRA HIGGING OF NUS CORFORATION ON 01/25/88

DATE OF THIS REPORT: 08/80/88 DATE OF LAST MODIFICATION: 05/30/88

GREENO WATER ROUTE SCORE : 34.87 BURFACE WATER ROUTE SCORE: 14.55 BLA ROUTE SCORE : 0.00

MIGRATION SCORE : BOUST

SITE: CHAMPION INTERNATIONAL CORPORATION

HRS GROUND WATER ROUTE SCORE

	CATEGORY/FACTOR	RAW DATA	ABN. VALUE	SCORE
1 ,	OBSERVED RELEASE	NO	0	Ō
2.	ROUTE CHARACTERISTICS	(
	DEPTH TO WATER TABLE DEPTH TO BOTTOM OF WASTE	40 FEE 6 FEE	 ·	
	DEPTH TO AQUIFER OF CONCERN	34 FEI	ET 2	4
	PRECIPITATION EVAPORATION	48.0 ING 43.0 ING		
	NET PRECIPITATION	5.0 IN	CHES 2	2
	PERMEABILITY	1.0X10-2 CM/	/SEC 3	3
	PHYSICAL STATE		3	3
	TOTAL ROUTE CHARACTERISTICS S	CORE:		12
3.	CONTAINMENT	re saa per - es antiko egare - al deed orens annori - Allejik son ennor -ta -tiredo n ee R	3	:3
4.	WASTE CHARACTERISTICS	* <u></u>		1915 - 1916 1917 1916 1916 1916 19 16 1916 1916 1916 1916 1916 1916 1916 1916 1916
	TOXICITY/PERSISTENCE: CHROMIUM			18
	WASTE QUANTITY CUBIC YDS ORUMS GALLONS TONS	0 10001 0 0		
	TOTAL	2500 CU	. YOS B	8
	TOTAL MASTE CHARACTERISTICS S	CORE:		26
5.	TARGETS	114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114 - 114		e de la competition de la competition e e e tourse e
	GROUND WATER USE		3	9
	DISTANCE TO NEAREST WELL AND TOTAL POPULATION SERVED NUMBER OF HOUSES NUMBER OF PERSONS NUMBER OF CONNECTIONS NUMBER OF IRRIGATED ACRES	7500 FEE MATRIX VALUE 285 PEE 75 0 0 0	2	12
	TOTAL VARGETS SCORE:	•		71
	COURTED TO TO TO		pag. 2	

SITE: CHAMPION INTERNATIONAL CORPORATION

HRS SURFACE WATER ROUTE SCORE

	CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1.	OBSERVED RELEASE	NO	O	0
2.	ROUTE CHARACTERISTICS	naan ka jajansa mareen sa ministri että maan middamaa mitteetti men a	(1987 - 1988 1888 - 1888 - 1888 	re e access e agaggag mallan dentre e sir de de de e e estatue ense e
	SITE LOCATED IN SURFACE WATER SITE WITHIN CLOSED BASIN FACILITY SLOPE INTERVENING SLOPE	NO NO 2.5 % 2.5 %	0	0
	24-HOUR RAINFALL	3.5 INCHES	3	3
	DISTANCE TO DOWN-SLOPE WATER	5 FEET	3	6
	FHYSICAL STATE	3		3
	TOTAL ROUTE CHARACTERISTICS SC	ORE:		12
3.	CONTAINMENT	3	- 1886-1970 - 1884 - 1884 - 1977 - 1984 - 1984 - 1984 - 1984 - 1984 - 1984 - 1984 - 1984 - 1984 - 1984 - 1984	3
4.	WASTE CHARACTERISTICS		, de 200-200-00 - 1 - 40 - 1 1 - 11 - 11 - 11 - 11 - 11 - 11 - 	
	TOXICITY/PERSISTENCE:CHROMIUM			19
	WASTE QUANTITY CUBIC YDS DRUMS GALLONS TONS	0 10001 0 0		
	TOTAL	2500 CU. YI)S 8	8
	TOTAL WASTE CHARACTERISTICS SC	CRE:		26
5.	TARGETS	, 1980, 1981, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984, 1984,	- Colonial Marian Congression (Constitution of the Colonial Constitution	aggers i de mangaleg i ermon plan try a malga majalahin din e "bla".
	OUPFACE WATER USE		8	5
	DISTANCE TO SENSITIVE ENVIRONM COASTAL WETLANDS FRESH-WATER WETLANDS CRITICAL HABITAT	ENTS NONE 2000 FEET 2000 FEET	а	4,
	DISTANCE TO STATIC WATER DISTANCE TO WATER SUPPLY INTAKE AND TOTAL POPULATION SERVED NUMBER OF HOUSES NUMBER OF FERSONS NUMBER OF CONNECTIONS HUMBER OF IRRIGATED ACRES) 3 MXLES E / 3 MXLES MATRIX VALUE O O O O O O	o	Õ
	TOTAL TARGETS SCORE:			10

SITE: CHAMPION INTERNATIONAL CORPORATION

FASE 4

HRS AIR ROUTE SCORE

CATEGORY/FACTOR RAW DATA ASN. VALUE SCORE

1. CBSERVED RELEASE NO O O

2. WASTE CHARACTERISTICS

REACTIVITY:

MATRIX VALUE

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY CUBIC YARDS

DRUMS CALLONS TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE:

N/A

3. TARGETE

POPULATION WITHIN 4-MILE RADIUS

0 to 0.25 mile

0 to 0.50 mile

0 to 1.0 mile

O to 4.0 miles

CRITICAL HABITAT

DISTANCE TO SENSITIVE ENVIRONMENTS COASTAL WETLANDS FRESH-WATER WETLANDS

DISTANCE TO LAND USES

COMMERCIAL/INDUSTRIAL

FARK/FOREST/RESIDENTIAL

ACCIOULTURAL LAND

PRIME FARMLAND

MISTORIC SITE WITHIN VIEW?

TOTAL PARCETS SCURE:

NZA

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS FOR SITE: CHAMPION INTERNATIONAL CORPORATION AS OF 03/30/88

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS X 3
CONTAINMENT X 3
WASTS CHARACTERISTICS X 26
TARGETS X 21

= 19356 /57,330 \times 100 = 34.29 = S_{qw}

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS 12
CONTAINMENT X 3
WASTE CHARACTERISTICS X 26
TARGETS X 10

= $9360 / 64,350 \times 100 = 14.55 = S_{\bullet\bullet}$

AIR ROUTE SCORE

OBSERVED RELEASE 0.00 = 9.00 = 9.00

BUMMARY OF MIGRATION SCORE CALCULATIONS

	S	5=
GAOUND WATER ROUTE SCORE (S.)	34 : 29	1175.80
SURFACE WATER ROUTE SCORE (S)	14.55	211 · 70
AIR ROUTE SCORE (Sair)	0.00	0.00
Office of Seign to Seign		1387.50
V (Segul Segul + Segul)		37.25
S _M = √ /S ² gw + S ² gw + S ² gtr)/1.73		21.53

RECONNAISSANCE CHECKLIST FOR HRS2 CONCERNS

Instructions: Obtain as much "up front" information as possible prior to conducting fieldwork. Complete the form in as much detail as you can, providing attachments as necessary. Cite the source for all information obtained.

Sitename: Champion International Corporation

City, County, State: Orangeburg, Orangeburg, South Carolina

EPAID No.: 50003342177

Person responsible for form: Jerri Higgins

Date: 03/25/88

<u>Air Pathway</u>

Describe any potential air emission sources onsite: Glues & solvents used at plant.

Burning of glue sludge in fuel-fired boilers without district air personnel being aware.

Identify any sensitive environments within 4 miles: Carolina Bays, fresh water wetlands, marshy areas surrounds the area (topo map, Ref 11, 13)

Identify the maximally exposed individual (nearest residence or regularly occupied building - workers do count): Workers at Decolarn, Inc. (Ref. 1)

Groundwater Pathway

Identify any areas of karst terrain: - NA

Identify additional population due to consideration of wells completed in overlying aquifers to the AOC: —— N/A

Do significant targets exist between 3 and 4 miles from the site? no municipal supplies.

Is the AOC a sole source aquifer according to Safe Drinking Water Act? (i.e. is the site located in Dade, Broward, Volusia, Putnam, or Flager County, Florida) no

Surface Water Pathway

Are there intakes located on the extended 15-mile migration pathway? 70

Are there recreational areas, sensitive environments, or human food chain targets (fisheries) along yes, Middle Pen Creek, swamps, Carolina Bays.

Onsite Exposure Pathway

Is there waste or contaminated soil onsite at 2 feet below land surface or higher? yes, drums at rear (Ref. 7,8)

Is the site accessible to non-employees (workers do not count)? not sure,

in a dense industrial area, difficult to see back into property for a fence.

Are there residences, schools, or daycare centers onsite or in close proximity? yes, Whittaker School, directly behind facility, less than 500 feetaub (-lopo map)

Are there barriers to travel (e.g., a river) within one mile? yes, Middle Fen Creck

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 210 RUN DATE: 05/27/87 RUN TIME: 18:43:30

M.2 - SITE MAINTENANCE FORM

			* ACTION:	-		
EPA ID : SCD003342177						
SITE NAME: CHAMPION INTERN	NATIONAL CORP	SOURCE: N				. _
STREET : 5 CHOP RD		CONG DIST: 02				_
CITY : ORANGEBURG		ZIP: 29115			_	
ONTY NAME: ORANGEBURG		CNTY CODE : 075	*		_	
LATITUDE : 33/29/42.0	LONGITU	DE : 080/51/36.0	·//	·· <u> </u>		/
LL-SOURCE: R		LL-ACCURACY:	, _			-
SMSA :	HYDR	0 UNIT: 03050203	<u> </u>			
INVENTORY IND: Y REMEDIAL	IND: Y REMOVAL IND:	N FED FAC IND: N	* -	_	-	_
MPL IND: N NPL LISTING	DATE: NPL DELIS	TING DATE:	* -	/	/	
SITE/SPILL IDS:			*			
RPM NAME:	RPM PHO	NE:	*			
SITE CLASSIFICATION:	sı	TE APPROACH:	*			
DIOXIN TIER:	REG FLD1:	REG FLD2:	*			_
RESP TERM: PENDING ()	NO FURTHER ACTION (X)	* PENDING	(_)	NO FURTHER	ACTION (_)
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SITE DESCRIPTION:						
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U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAU... 211 RUN DATE: 05/27/87 RUN TIME: 18:43:30

M.2 - PROGRAM MAINTENANCE FORM

			•	* ACTIO	N: _		1
SITE:	CHAMPION INT	ERNATIONAL CORP					
EPA ID:	SCD003342177	PROGRAM CODE: H01	PROGRAM TYPE: ^				_ ^
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PROGRAM N	NAME: SI	TE EVALUATION	,	·		 ****	•
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U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 212 RUN DATE: 05/27/87 RUN TIME: 18:43:30

M.2 - EVENT MAINTENANCE FORM

			* ACTION: _		
SITE: CHAME PROGRAM: SITE	PION INTERNATIONAL CORP EVALUATION				
EPA ID: SCDOO	03342177 PROGRAM CODE: H01	EVENT TYPE: DS1			
FMS CODE:	EVENT QUALIFIER :	EVENT LEAD: E	*		_ ,
EVENT NAME:	DISCOVERY	STATUS:	*		
DESCRIPTION:					
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COMP :	COMP :	COMP : 06/01/81	*/	//	//_
HQ COMMENT:					
			*		
RG COMMENT:					
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COOP AGR #	AMENDMENT # STATUS	STATE %			
		0	*		

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 213 RUN DATE: 05/27/87 RUN TIME: 18:43:30

M.2 - EVENT MAINTENANCE FORM

			* ACTION: _		
SITE: CHAMPI PROGRAM: SITE E	ON INTERNATIONAL CORP				
EPA ID: SCD003	342177 PROGRAM CODE: H01	EVENT TYPE: PA1			
FMS CODE:	EVENT QUALIFIER :	EVENT LEAD:	* _	******	_ *
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ORIGINAL	CURRENT	ACTUAL			
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POTENTIAL HAZARDOUS WASTE SITE

SITE NUMBER (to be as-REGION

IDENTIFICATION AND PRELIMINARY ASSESSMENT

NOTE: This form is completed for each potential hazardous westersite to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection

SCD003342177 URANGENJEG CHAMPIUI, INTERNATIONAL CURF FIVE CHJP RU URANGEBJRG SC 29115 FUGLE, UZZIE, MGR/FIN DE* 8035342632 1 FEDERAL 2 STATE 3 COUNTY 14 MUNICIPAL 5 PRIVATE 5 TELEPHONE NUMBER 103-C 3JIIF ICATION" DATE: 810009 EARL MILLIAMS PHUNE: 8:3-758-5544 2 TELEPHONE NUMBER 3 TELEPHONE NUMBER 4 NONE 5 UNKNOWN 5 UNKNOWN 5 UNKNOWN 6 RECOMMENDATION 7 UNKNOWN 7 UNKNOWN 7 UNKNOWN 8 STEINSPECTION NEEDED 7 COUNTY NAME 7 UNKNOWN 1 UNKNOWN 7				ATION						
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B. RECOMMENDATION	A. APPARENT SERIOUSNESS OF PROBL			·						
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E. ARE THERE BUILDINGS ON THE SITE!	C. AREA OF SITE (In acres)	1		SITE IS						
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Co	ntinued From Front													
				11	V. C	CHARACTERIZAT	ION	OF SITE ACTIVIT	Ϋ́					
In	dicate the major sit	e acti	ivity(ies,	and det	ails	relating to each	activ	ity by marking 'X' i	n th	e appro	opr	iate boxes	5.	
' x '	A, TRANSPOR	TER	×		в. 9	STORER	×	C. TREATER	R		×	C). C	015POSER
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	2. SHIP			2. 5 URFA	CE	IMPOUNDMENT		2. INCINERATION			â	LANDFA	RM	1
	3. BARGE			3. DRUM	5			3. VOLUME REDUCTI	ON		3	OPEN D	UMI	<u> </u>
	4. TRUCK			4. TANK	. A F	OVE GROUND		4. RECYCL:NG/RECO) V E	RY		SURFAC	E 1	MPOUNDMENT
	5. PIPELINE			5. TANK	ВЕ	LOW GROUND		5. CHEM./PHYS. TRE	AT	MENT	•	. MIDNIGH	T (DUMPING
	6. OTHER (specify):			6. CTHE	P (S	specify).		8. BIOLOGICAL TREA	ATM	ENT		. INCINER	TAS	ON
								. WASTE OIL REPRO	CE	SSING		UNDER	RO	OUND INJECTION
								3. SOLVENT RECOVE 9 OTHER (Specify):	RY		}	S. OTHER (spe	selfy):
Ε.		الع	לדוטיף	ange	J. 7.	ins and s		LEIKTE FROM LOCATEDOR DECORRATION						
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			<i></i>	<i>U</i>		V. WASTE RELA	TED	INFORMATION						
	WASTE TYPE	/2 L	מוטסו	[]3	sc	DLID :]4	stu	nge ' }5. g	A5					
is Is]10 OTHER (specif]2 C		E []3	. 1G	SNITABLE []4	RAC	MMABLE	IIGH	ILY VOI	L A 1	TILE		
	WASTE CATEGORIE Are records of wast		aulable? S	Specify its	rms.	such as manifests.	mvei	atories, etc. below.						
	No.			-:4		> - 6 1	4 .	1 /373 4 5 5						
		unt(s			asu T		tego	ry; mark 'X' to indic	ate T				res	
0.14	a. SLUDGE	AMOL	b. OIL		-	c. SOLVENTS		d. CHEMICALS	 	e, 50	OL:	D\$	-	f. OTHER
		,,,,,,				2								2
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'x'	CHIPAINT, PIGMENTS	'X' (1	HOILY WASTES	5	'×'	THALOGENATED SOLVENTS	> 'X	1, A CIOS	' X '	- C1 F 1 V	A 5	H	' ×	1. LABORATORY PHARMACEUT.
	2 METALS SLUDGES	(2	2)01HER	(specily):		(21 NON-HALOGNT SOLVENTS		(2) PICKLING LIQUORS		121A5B	E.S.	TOS		7211105PITAL
	(3) POTW					(3) OTHER(specity		13-CAUSTICS		in Mic. Min		G/ Al: INGS		(3) FADIOACTIVE
	(4) A LUMINUM SLUDGE							41 PESTICIDES		.41 F F F SML	7 F O	US . WASTES		(4) MUNICIPAL
	(5) OTHER(specify):							(S) CYES/INKS		5141	10	ERROUS . WASTES	-	(5) O THER (specify):
								(6) CYANIDE	-	-6. O H	f IL 1+	(specity):		
								17; PHENOLS						
								(8) HALOGENS						
								(9) PCB						
								(10) METALS						
							-	.::ППОТНЕЯ (apecify)						

Γ		V. WA	STE RELAT	ED INFORMATIO	ON (continued)	
	3. LIST SUBSTANCES OF GREATES	T CONCERN	WHICH MAY B	E ON THE SITE (place in descending order of hazard).	
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					WN OR REPORTED TO EXIST AT THE SITE.	
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ı	Waster Grad Lierx.	bert t	o Whang	shung Cau	aty Sandfill which is permit	tten
				ARD DESCRIPT		
	A. TYPE OF HAZARD	B. POTEN- TIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo.,day.yr.)	E.REMARKS"	
Ī	. NO HAZARD	Х				ر المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة ا
2	HUMAN HEALTH	,				
3	NON-WORKER 'INJURY/EXPOSURE					
	. WORKER INJURY					
8	CONTAMINATION OF WATER SUPPLY					
٥	CONTAMINATION OF FOOD CHAIN					
,	CONTAMINATION OF GROUND WATER					
8	CONTAMINATION OF SURFACE WATER					
٥	DAMAGE TO FLORA/FAUNA					
	0. FISH KILL					
1	1. CONTAMINATION OF AIR					
1:	2. NOTICEABLE ODORS					
ŀ	3. CONTAMINATION OF SOIL					
1	4. PROPERTY DAMAGE					
,	5. FIRE OR EXPLOSION			grann with a region a recommen		
10	5 SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS					

21. MIDNIGHT DUMPING
22. OTHER (apacity):

17. SEWER, STORM DRAIN PROBLEMS

18. EROSION PROBLEMS

19. INADEQUATE SECURITY

20. INCOMPATIBLE WASTES

Continued From Front						
		VII. PERMIT IN	FORMATION			
A. INDICATE ALL APPL	CABLE PERMITS HELD	BY THE SITE.				
	(· · · ·	<i>i=</i> 3				
1 NPDES PERMIT	2 SPCC PLAN		A STATE OF THE STA			
A AIR PERMITS	5 LOCAL PERMIT					
7 RCRA STORER	8 RCRA TREATER	R . RCRA DISPOS	ER			
F****		Cha	impion International Corp. is an			
B. IN COMPLIANCE?			erim Status Facility.			
1. YES 2 NO WINKNOWN						
L.J 1. FE3	L] 2 110	N 2 OHKHOWH				
4 WITH RESPECT T	O (list regulation name &	number):				
		VIII, PAST REGULAT	TORY ACTIONS			
TV A. NONE	B. YES (summerize					
<u></u>						
	1X. ji	NSPECTION ACTIVIT	Y (past or on-going)			
A NONE	$\left[\overrightarrow{Y} ight]$ B. YES (complete in	ems 1,2,3, & 4 below)				
I TYPE OF ACTIV	2 DATE (PAST ACT (mo., day, a	ION BY:	4. GESCEPTION			
Inspection	Month	ly State	Orangeburg County Landfill			
			inspected monthly.			
	Χ.	REMEDIAL ACTIVIT	TY (past or on-going)			
A. NONE	B. YES (complete it	ems 1, 2, 3, & 4 below)				
	2. DATE	OF 3. PERFORMED				
1. TYPE OF ACTIV	VITY PAST ACT		4. DESCRIPTION			

NOTE: Based on the	e information in Section	ons III through X, fi	ill out the Preliminary Assessment (Section II)			

information on the first page of this form.

Ç,	EPA
W 19	

POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION				40	44-
	ខារខ្លួកថ	d by	HQ		

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NOTE: This form is completed for each potential hazardous westersite to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment), File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency: Site Tracking System: Hazardous Waste Enforcement Task Force (EN-335): 401 M St., SW: Washington, DC 20460.

Agency; Site Tracking System; Hazardous waste Enforcement Task Fo	rce (<i>EN-335</i>); 40	01 M St., SW;	Washington, DC 20460.								
	ATION										
SCD003342177 ORANGEHURG	ET (or other ide	entifier)									
CHAMPIUM INTERNATIONAL CORF											
FIVE CHOP RU URANGEBURG SC 29115	TE E. ZIP	TE E. ZIP CODE F. COUNTY NAME									
FOGLE, OZZIE, MGR/FIN DE* 8035342632	2. TELEPHONE NUMBER										
1. FEDERAL 2. STATE 3 COUNTY 4 MUNICIPAL	5 PRIVATE	E ([]] 8 .4	KNOWA								
i. SITE DESCRIPTION Handfill											
"103-C WHIFICATION" DATE: 810609 EARL WHILLIAMS PHONE: 803-758-5544			K. DATE IDENTIFIED (mo., day, & yr.)								
		2	TELEPHONE NUMBER								
	plete this sect.	ion last)									
A. APPARENT SERIOUSNESS OF PROBLEM											
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B. RECOMMENDATION											
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3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR	b. WILL SE PER	PFORMED BY									
b. WILL BE PERFORMED BY:	4. SITE INSPECT	ION NEEDED	(law priority)								
C. PREPARER INFORMATION 1. NAME	2. TELEPHONE :	NUMBER	3. DATE (mo., day, & yr.)								
Dulyin Grange	80.3 - 75	A-56A	9-14-82								
U III. SITE INFORM											
	OTHER (specify is alter that including		nts like "midnight dumping" where n for waste disponal hae occurred.)								
B. IS GENERATOR ON SITE!											
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C. AREA OF SITE (In acres) D. IF APPARENT SERIOUSNESS OF											
1. LATITUDE (degmilri-enci)	2	RONSITUME	EdequeinIn-e- (AG)								
E. ARE THERE BUILDINGS ON THE SITE? 1. NO 2. YES (apacity):											

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POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

			_	_	_	
REGION				(to	be	40-
	การุกธ	d by	Hυ			

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NOTE: This form is completed for each potential hazardous weste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). Pile this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-135); 401 M St., SW; Washington, DC 20460.

Agency; otto fracking System; Hazardous waste Entorcement Task Fo	orce (24-233); 401 % St., Sw;	irasanigion, DC 20400.
	ATION	
SCD003342177 URANGENURG	EET (or other identifies)	
CHAMPIUM INTERNATIONAL CORP	\F 210 CODE \F	TO CONTRACT AN ALLES
FIVE CHUP RU URANGEBURG SC 29115		COUNTY NAME
FOGLE, OZZIE, MGK/FIN DE* 8035342632		TELEPHONE NUMBER
1. FEDERAL 2. STATE 3 COUNTY 4 MUNICIPAL	S PRIVATE THE UK	NOWN
1. SITE DESCRIPTION Handfill		
"103-C MULLFICATION" DATE: 810609 EARL WILLIAMS PHONE: 803-758-5544		K. DATE IDENTIFIED (mo., dey, & yr.)
PRUNE: 803-138-5544	2.	TELEPHONE NUMBER
	plete this section last)	
A. APPARENT SERIOUSNESS OF PROBLEM		
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B. RECOMMENDATION		
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3. SITE INSPECTION NEEDED 4. TENTATIVELY SCHEDULED FOR:	b. WILL BE PERFORMED BY:	
b. WILL BE PERFORMED BY:		· · · · · · · · · · · · · · · · · · ·
	4. SITE INSPECTION NEEDED :	low priority)
C. PREPARER INFORMATION		
1. NAME	2. TELEPHONE NUMBER	3. DATE (Mo., day, & yr.)
Dulding Branza	803-758-5681	9-14-82
U III. SITE INFORM		
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C. AREA OF SITE (In acres) D. IF APPARENT SERIOUSNESS OF		
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E. ARE THERE BUILDINGS ON THE SITET		
1. NO V 2. YES (apacity):		

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		l	٧. ر	CHARACTERIZAT	101	OF SITE ACTIVIT	Y								
Indicate the major sit	e activity(i	es) and det	ails	relating to each a	cti	vity by marking 'X' i	n the app	ropri	ate boxes	s					
A. TRANSPOR	TER	×	8. :	STORER	X	C. TREATES	₹	×). C	ISPOSER				
1. RAIL		1. PILE				I. FILTRATION		4	LANDE	L L					
2. SHIP		2. SURF	ACE	E IMPOUNDMENT		2. INCINERATION			. LANDFA						
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4. TRUCK				OVE GROUND		4. RECYCLING/RECO			MPOUNDMENT						
5 PIPELINE				LOW GROUND	-	5. CHEM./PHYS. TRE		} -	WONIGH						
6. OTHER (specify):	ł	6. OTHE	P (3	pecify):		6. BIOLOGICAL TREA									
	}				\vdash	7. WASTE OIL REPRO									
				Ì	-	9. OTHER (specify):									
E. SPECIFY DETAILS	OF SITE AC	TIVITIES A	SNE	EEDED	·			Ĺ							
					عد	wester from	. Ora	~\ \	ا ماصد	ي ر	et. Desp.				
Champion International has interin status authorization															
Denagling Constitutional transmitted Done to 420 star from C51. V. WASTE RELATED INFORMATION															
A WASTE TYPE	J			V. WASTE RELAT	EC	INFORMATION									
A. WASTE TYPE V. WASTE RELATED INFORMATION A. SLUDGE 5. GAS															
B. WASTE CHARACTE															
	1 UNKNOWN 2. CORROSIVE 3. IGNITABLE 34 RADIOACTIVE 5 HIGHLY VOLATILE														
ME TOXIC TO REACTIVE TO INERT TO FLAMMABLE															
10. OTHER (specify):															
C. WASTE CATEGORIES 1. Are records of wastes available? Specify items such as manufests, inventories, etc. below.															
	es svallanic:	opecity is	enta	SUCH as mountered, in	10.	'Alones, etc. perow.	•								
2 Estimate the amo	unt(specify	unit of me		relat waste by out	200	ory, mark 'X' to indic	ata which		**** 150 0						
a. SLUDGE	ы. о		1	c. SOLVENTS	T	d. CHEMICALS		[f. OTHER						
AMOUNT	AMOUNT		AM	6. SOLVEN 15	1	MOUNT	AMOUNT	SOL		AM	1. OTHER				
				?							2				
UNIT OF MEASURE	UNIT OF ME	ASURE	υN	IIT OF MEASURE]	NIT OF MEASURE	UNIT OF	ME	SURE	UNIT OF MEASURE					
'X' (1) PAINT, PIGMENTS	X' HIOILY WAST	£5	' X '	SOLVENTS	ř	(f) A CIDS	'X'	YASE		×	, LABORATORY PHAHMACEUT.				
IZIMETALS SLUDGES	121 O THE	ER(specify):		(2) NON-HALOGNID	<u>,</u>	12) PICKLING LIQUORS	.21 A S	BEST	. os		(2:1105P)TAL				
(3) POTW				131 OTHER (Specify)	1	(3) CAUSTICS	1.17%	LLIN NE T	S/ AILINGS		31 RADIOACTIVE				
(4) ALUMINUM SLUDGE						(4) PESTICIDES	.41 F F	HPQ LTS.	PASTES		AI MUNICIPAL				
(5) OTHER(specify):						ISI OYES/INKS	1 514	L + G.	AROUS AASTES	<u> </u>	B) O THER(specify):				
						(6) CYANIDE	1.01.0.	HEFU	(specify):						
						(7) PHENOLS									
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Continued From Page 2			ED INFORMATIO	
3. LIST SUBSTANCES OF GREATES	T CONCERN	WHICH MAY	BE ON THE SITE (P	lace in descending order of hezerdy.
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4. ADDITIONAL COMMENTS OR NAR	RATIVE DES	CRIPTION O	F SITUATION KNOW	IN OR REPORTED TO EXIST AT THE SITE.
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Telaster Had heire.	الله فالمعلم	e Grang	Jehreng Care	Lipone marufacturary of saxely the
			ARD DESCRIPTI	
A. TYPE OF HAZARD	B. POTEN- TIAL TIAL (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo.,day,yt.)	E. REMARKS'
. NO HAZARO	X	10 pt 1		
. HUMAN HEALTH	,,			
NON-WORKER 'INJURY/EXPOSURE				
. WORKER INJURY				
CONTAMINATION OF WATER SUPPLY				
CONTAMINATION OF FOOD CHAIN				
CONTAMINATION OF GROUND WATER				
CONTAMINATION OF SURFACE WATER				·
DAMAGE TO FLORA/FAUNA				
3. FISH KILL				
1. CONTAMINATION OF AIR		 		
2. NOTICEABLE ODORS	····			
S. CONTAMINATION OF SOIL				
4. PROPERTY DAMAGE				
f. FIRE OR EXPLOSION				
8. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
7. SEWER, STORM DRAIN PROBLEMS				
8. EROSION PROBLEMS				
9. INADEQUATE SECURITY				
O. INCOMPATIBLE WASTES				
1. MIDNIGHT DUMPING				
2. OTHER (apacity):				

		1	VII. PERMIT INFO	PRMATION								
A. INDICATE ALL APPLIC	ABLE PER	MITS HELD BY TH	E SITE.									
	[-]											
1. NPDES PERMIT			3. STATE PERMIT									
4. AIR PERMITS			6. RCRA TRANSPO	i de la companya de la companya de la companya de la companya de la companya de la companya de la companya de								
7 RCRA STORER	B RCF	RA TREATER	9 RCRA DISPOSER	on vetacoaticoal Coan is 30								
10. OTHER (specify):			Cham	npion International Corp. is an								
B. IN COMPLIANCE?				cim Status Facility.								
1. YES	2. NO		A NAKNOMN									
4. WITH RESPECT TO	O (list regul)	ution name & numbe	r):									
VIII. PAST REGULATORY ACTIONS												
A. NONE	B. YE	S (summerize below	•)									
•												
i												
ł												
<u></u>		- IX.INSPE	CTION ACTIVITY	(past or on-going)								
			=									
M A NONE	Z B. YES	(complete items 1,	2,3, & 4 below)									
1.TYPE OF ACTIV	TY	2 DATE OF PAST ACTION (mo., day, & yr.)	3 PERFORMED BY: (EPA/State)	4. DESCRIPTION								
inspection		Monthly	State	Crangabuas County Landfull								
				Crangabing County Landfill inspected monthly.								
				7								
		X. REM	EDIAL ACTIVITY	(past or on-going)								
A. NONE	B. YES	(complete items 1,	2, 3, & 4 below)									
1. TYPE OF ACTIV	ITY	2. DATE OF PAST ACTION (mo., day, ds yrs)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION								
•		on in Sections II page of this for		out the Preliminary Assessment (Section II)								

If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

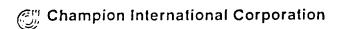
🗖 A. FIRST NOTIFICATION B. SUBSEQUENT NOTIFICATION (complete item C) C. INSTALLATION'S EPA I.D. NO.

IX. DESCRIPTION OF HAZARDOUS WASTES (co	ntinued from fron	t)			
A. HAZARDOUS WASTES FROM NON—SPECIFIC SOUR waste from non—specific sources your installation handle			CFR Part 261,31 for	each listed hazardous	
F005 F005		23 - 26	5 23 - 26	23 - 26	
7 8 23 - 26 23 - 26 22	9	10	11	12	
B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. I specific industrial sources your installation handles. Use	Enter the four—digit randditional sheets if no	number from 40 CFR Pa ecessary.	rt 261.32 for each lis	ted hazardous waste from	[™]
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23 - 26 23 - 26 23	26	23 - 26	23 - 26	23 - 26	
C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS I stance your installation handles which may be a hazardou			40 CFR Part 261,33	for each-chemical sub-	
31 23 - 26 37 38 21 - 26 38	- 26 39	34	35 23 - 26 41	36	
23 - 26 23 - 24 23	- 26	23 - 26	23 - 26	23 - 26	
23 - 26 23 - 26 23	- 26	23 - 26	23 - 26	23 - 26	_
D. LISTED INFECTIOUS WASTES. Enter the four—digit n hospitals, medical and research laboratories your installat				rom hospitals, veterinary	
23 - 26 23 - 26 23	51	52	53	54	
E. CHARACTERISTICS OF NON-LISTED HAZARDOUS hazardous wastes your installation handles. (See 40 CFR			ling to the characteri	stics of non-listed	
(D001) X2. CO	RROSIVE	3. REACTIVE	(1	4. TOXIC	
X, CERTIFICATION		a			
I certify under penalty of law that I have persona attached documents, and that based on my inquir. I believe that the submitted information is true, acmitting false information, including the possibility of	y of those individucturate, and comp	ials immediately resp lete. I am aware that	onsible for obtain	ing the information,	- 18
SIGNATURE	NAME & OFFICIA	L TITLE (type or print)		DATE SIGNED	\dashv
FPA Form 8700-12 (6-80) REVERSE	Fred Rigder Operations	•		8/15/80	

SEPA	· - · · · · · · · · · · · · · · ·	RONMENTAL PROTECT OF HAZARDOUS		IVITY	INSTRUCTIONS: If you received a preprinted
METALLA		OT TIALANDOOD	WAGTE AGT		label, affix it in the space at left. If any of the information on the label is incorrect, draw a line
INSTALLA- TION'S EPA I.D. NO.			· 0 (2 0 2	
, NAME OF IN-	26500050617	'ö-		. 0 2.	through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items 1, 11, and 111
I. STALLATION	11				below blank. If you did not receive a preprinted
INSTALLA-	FO BOX 1087		REG	EIVED	label, complete all items. "Installation" means a single site where hazardous waste is generated,
II. MAILING ADDRESS	CONTRACTOR CONTRACTOR	SC 29116	EPA/A	ECIUM	treated, stored and/or disposed of, or a trans- porter's principal place of business. Please refer
				- 010H	to the INSTRUCTIONS FOR FILING NOTIFI-
LOCATION	C7: 10		1-1. 5.1	5	CATION before completing this form. The information requested herein is required by law
IIL OF INSTAL-	FIVE CHOP RO ORANGEBURG.	3AD SC 29118	HOV Z4	i log PM	(Section 3010 of the Resource Conservation and
_		and the second second	EMFOR		Recovery Act).
FOR OFFICIAL	USE ONLY			/	
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CHAMPI	ON Build	IING PRO	Ducts		
II. INSTALLATION	ON MAILING ADDRE	SS			
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15 16	CITY OR 1	OWN		ST. ZIP	CODE
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15 16			40 41	43 47	31 4
III. LOCATION O	OF INSTALLATION		<u></u>		
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WNERSHIP					
	A. 1	NAME OF INSTALLATION	ON'S LEGAL OWN	IER	
8					
13 16		TYPE OF HAZARDOU	JS WASTE ACT	IVITY /or	ater "X" in the appropriate box(es)
(enter the appropria	te letter into how			1 V 1 1 1 1 (C/)	
		A. GENERATION			RANSPORTATION (complete item VII)
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IX. DESCRIPTION OF HAZ	CARDOUS WASTES (co	ontinued from fro	nt)		
A. HAZARDOUS WASTES FRO waste from non-specific soul				40 CFR Part 261.31 for	each listed hazardous
F 0 0 5 26 7	2 F005 23 · 26 8	3 - 26 9	23 - 26	23 - 26 11	5 12 12 23 - 26
B. HAZARDOUS WASTES FRO specific industrial sources you				R Part 261.32 for each lis	ted hazardous waste from
13 23 - 26 19 23 - 26 25	23 - 26 20 23 - 26 25 26	15 21 21 27	23 · 26 22 23 · 26 28	23 - 26 29	23 - 24 24 23 - 24 30
C. COMMERCIAL CHEMICAL I stance your installation handle			e four-digit number fr		for each chemical sub-
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D. LISTED INFECTIOUS WAST hospitals, medical and research					rom hospitals, veterinary
E. CHARACTERISTICS OF NO				53 23 - 26 conding to the characteri	54 23 - 26 stics of non-listed
hazardous wastes your installa		<i>Parts 261.21 – 26</i> 1	[,24.) []3. REACT (D003)		4. TOXIC
X. CERTIFICATION					
I certify under penalty of attached documents, and the I believe that the submitted mitting false information, in	hat based on my inquir I information is true, a	y of those indivi ccurate, and com	duals immediately r plete. I am aware t	esponsible for obtain	ing the information,
SIGNATURE July 1.	laster	Fred Rig	AL TITLE (type or pr den ns Manager	int)	1/-19-80

EPA Form 8700-12 (6-80) REVERSE



Richard C. Wigger Vice President—State and Environmental Alfairs Chilandmark Square Stamford, Connecticut 06921 Telephone 203 358 7246

October 9, 1980

Mr. Douglas M. Costle Administrator Office of Solid Waste WH 563 U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460

Dear Mr. Costle:

In accordance with the requirements of Section 3010 of the Resource Conservation and Recovery Act (RCRA), Public Law 94-580, and the regulations promulgated thereunder, Champion International Corporation filed, in a timely manner, "Notification of Hazardous Waste Activity Forms" for 64 facilities operating in various U.S. EPA regions throughout the country (see attached Champion's good faith effort to comply with the notification requirements of RCRA entailed the expenditure of thousands of man-hours of testing, analysis and reporting. In all cases, Champion attempted to resolve questions about the meaning or interpretation of the regulations so as to comply with the perceived spirit as well as the letter of the law. In spite of this, Champion is concerned about the absence of clear guidance prior to the notification date from the EPA with respect to the meaning of several sections of Part 261, "Identification and Listing of Hazardous Wastes, " 45 F.R. 33048 et seq. (May 19, 1980).

In addition, we call your attention to the frequent reference in Part 261, Subpart B and in the preamble to the May 19 regulations to document SW-846, suggesting that test methods used must be in agreement with this document to be correct. To our knowledge, SW-846 was not available until July 3, 1980 and was not received by us until July 7, 1980 even though multiple requests were made to the Information Office in Cincinnati, Ohio, in an effort to obtain a copy to guide us in our testing program.

EPA has acknowledged a need for clarification of the regulations and has published its intention to issue Regulatory Information Memoranda (RIMS) and Technical Amendments to the Regulations (TARS) for that purpose. Unfortunately, these clarifications were not published in time to be of benefit to those persons who had to notify prior to August 18, 1980. In fact, none of the RIMS or TARS has yet been published. As a result, the notification forms had to be completed while a number of significant issues remain to be resolved.

It is possible that subsequent publications by EPA aimed at clarifying the May 19 regulations will result in a determination by Champion that additional reporting was required prior to August 18, 1980 but that we were unable to do so because of the lack of adequate guidance from EPA. In such a case, we expect to be afforded the opportunity to supplement our filing as of August 18, 1980 and to receive interim status protection for timely notification.

Champion recognizes the enormous and important task EPA has understaken in carrying out the RCRA program. We trust that the magnitude of our effort to comply with the law is equally appreciated by EPA and that our understanding with respect to supplemental filings accords with EPA policy.

Very truly yours,

Richard C. Wigger Vice President

RCW:ms

Attachment

cc: EPA Regional Administrators:

Mr. William R. Adams, Jr.

Mr. Charles Warren

Mr. Jack Schramm

Ms. Rebecca W. Hanmer

Mr. John C. McGuire

Ms. Adlene Harrison

Ms. Kathleen Q. Camin

Mr. Roger L. Williams

Ms. Sheila Prindiville

Mr. Donald P. Dubois

REGION I

Champion Packaging Corrugating Plant 47 Maple Street Post Office Box 389 Mansfield, MA 02048

REION II

Champion Packaging Coldenham Road Post Office Box 271 Walden, NY 12586

Buffalo Envelope 270 Michigan Avenue Buffalo, NY 14203

REGION III

Champion Packaging Póst Office Box 25 Richmond, VA 23201

Champion Building Products
South Boston Plant
Highway 304
Post Office Drawer 250
South Boston, VA 24592

REGION IV

Champion Packaging Post Office Box 580 Roanoke Rapids, NC 27870

Champion Packaging Walltown Road Post Office Box 2086 Lexington, NC 27292

Champion Paper Mill Main Street Canton, NC 28716

Champion Building Products Catawba Hardboard Plant Post Office Box 66 New Old Highway 21 Catawba, SC 29704

Champion Building Products Newberry Plant Rural Route 1 Post Office Box 87 Silverstreet, SC 29145

Champion Building Products
Orangeburg Plant
Five Chop Road
Post Office Box 1087
Orangeburg, SC 29115

South Carolina Department of Health and Environmental Control

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Barbara P. Nuessle

COMMISSIONER Robert S. Jackson, M.D. 2600 Bull Street Columbia, S.C. 29201

MEMORANDUM

DATE:

June 21, 1982

TO:

Ed Gibson

Solid & Hazardous Waste

FROM:

James M. Burckhalter AMB

Lower Savannah Distract EQC

SUBJECT:

Champion International, Orangeburg County, formerly U. S. Plywood Corp.,

Interim status inspection, SCD 003 342 177

On June 16, 1982, George Nelson and the writer visited the referenced plant.

The plant is probably only a generator of hazardous waste. Central office records should already show them as only a generator, according to correspondence which is attached. Some of this correspondence was supplied by Champion.

Waste streams generated include solvent "finish" waste, solvent adhesive waste, waste oil and cured urea-formaldehyde glue waste.

Several hazardous waste facilities have been utilized. These include SCSCA Services, ABCO, and M & J Solvents in Georgia. Manifests for both South Carolina and Georgia appeared to be in order. Waste oil is collected by Harold Mason. Mr. Mason's permit status is unknown.

Champion's storage area consisted of a concrete pad and metal roof. Drums were labeled and had the necessary information. Champion does not store over ninety days. Labels supported this. Drums seemed in good condition.

The plant's contingency plan was difficult to assess. A one-page sheet listing phone numbers for plant personnel to handle emergencies during the day and night was available. This sheet is supplied to all plant personnel. It was suggested that the DHEC 24-hour number be added. A contingency plan covering all materials utilized at the plant was not available at the time of my visit. It had been sent to Ted Groszkiewicz (513-868-6660) at their Hamilton, Ohio, corporate headquarters for review. The plan had not yet been returned.

Record keeping practices seemed acceptable. Manifests, quarterly reports and other records were readily available.

The plant has three Air permits: 0/P-38-135, 0/P-38-136 and 0/P-38-151.

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IX. DESCRIPTION OF HAZARDO	US WASTES (continued from	front)						
A. HAZARDOUS WASTES FROM NON-	A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.							
B. HAZARDOUS WASTES FROM SPECt specific industrial sources your installa			5 11 11 23 - 26 R Part 261.32 for each li	6 12 12 23 - 26 isted hazardous waste from				
13 14 23 - 26 19 20 21 - 25 25 26 C. COMMERCIAL CHEMICAL PRODUC stance your installation handles which	26 23 - 25 21 27 27 27 27 28 T HAZARDOUS WASTES. Ente			18 23 - 26 24 21 - 26 30 23 - 26 37 57 67 each-chemical sub-				
31 22 - 26 37 38 23 - 26 43 44	26 23 - 26 23 - 26 23 - 26 23 - 26	23 · 26 40 23 · 26 46	23 - 26 41 23 - 26 47	36 23 - 26 42 23 - 26 48				
D. LISTED INFECTIOUS WASTES. Enter hospitals, medical and research laborate	er the four-digit number from 40	CFR Part 261.34 for eac		from hospitals, veterinary				
49 50	51	52	23 - 26	54				
E. CHARACTERISTICS OF NON-LISTE hazardous wastes your installation hand	D HAZARDOUS WASTES. Mar iles. (See 40 CFR Parts 261.21 —	k "X" in the boxes corres 261.24.)	ponding to the character	istics of non-listed				
(DCOL)	22. CORROSIVE	. <u></u>	TIVE (Х 4. тохіс D0001				
X. CERTIFICATION								
I certify under penalty of law tha attached documents, and that base I believe that the submitted inform mitting false information, including	d on my inquiry of those in ation is true, accurate, and c	dividuals immediately complete. I am aware	responsible for obtain	ning the information,				
SIGNATURE		FICIAL TITLE (type or p.	rint)	DATE SIGNED				
Fred K. So	Fred Ri Operati	gden, ons Manager		8/15/80				

I.D. -- FOR OFFICIAL USE ONLY

CERTIFIED MAIL

(III) Champion International Corporation

Knightsbridge Hamilton, Ohio 45020

October 1, 1980

South Carolina Department of Health and Environmental Control Solid and Hazardous Waste Management Division 2600 Bull Street Columbia, South Carolina 29201

Re: South Carolina Hazardous Waste Regulation, Permit Application

Gentlemen:

On Monday, September 29, 1980, our Orangeburg, South Carolina plant forwarded to your office three copies of their Hazardous Waste Facility Permit Application along with the necessary map and a copy of the EPA Notification of Hazardous Waste Activity form.

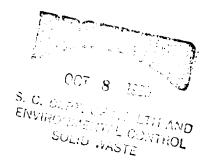
At the time of the mailing, the original copy was mistakenly mailed to our Hamilton, Ohio office. We are returning the original copy for your files and apologize for any inconvenience this may have caused.

Jim Thompson, Assistant Manager Eastern Environmental Affairs

Solid Wood Products

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Enc. 2



AND ENVIRONMENTAL CONTROL

AND HALARDOUS WASTE

MANAGEMENT DIVISION

300 BULL STREET, COLUMBIA, SC 29201

Champion Building	Products Ozzie Fo	ogle Industria	1 Finishing Lab	Mgr. (803)	354-2632
Facility Name	Facility Co.	ntact	Title		Phone
Five Chop Road		Orangeburg	SC	29115	Orangebur
Facility Address	Street Number	City	State	Zip Code	County
P.O. Box 1087		Orangeburg	SC	29115	Orangebur
Facility Mailing Address	Street Number	City	State	Zip Code	County
Fred W. Rigden	Ozzie Fo	gle Industria	l Finishing Lab	Mgr. (803)	534-2632
Operator's Name	Operator's (Contact	Title		Phone
Five Chop Road		Orangeburg	SC	29115	Orangebur
Operator's Address	Street Number	City	State	Zip Code	County
P.O. Box 1087		Orangeburg	SC	29115	Orangebur
Operator's Mailing Address	Street Number	City	State	Zip Code	County
Champion internar	ional Corp. Roll i	resiev Mar E	<u>uviionmentat Ai</u>	fairs (Jij)	000-4201
Owner's Name 1 Landmark Square	ional Corp. Ron I Owner's Cor	Stamford	Title CT	06921	Phone
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Owner's Name 1 Landmark Square Owner's Address 1 Landmark Square Owner's Mailing Address Type of Permit(s) Being App Treatment (specify) Oisposal (specify) Storage Temporary Other (specify) Site Status To Be Le	Street Number Street Number Street Number Experimental E	Stamford City Stamford City II.	CT State CT State CT State Status of Applicant Corporation Government Other (specify) Facility Status X Existing Operat	06921 Zip Code 06921 Zip Code Partnership Not-for Prof	County County Proprietorship it Corporation

HEC 1989 (5/80)

b. Is zoning compatible with the intended use of the site? \underline{Yes} c. If a zoning change is needed, what should new zoning be? N/A

15.	Existing Environmental Permits	Type of Parmi	it and Issuing Body	Permit No.	Date of Issue	Date of Expiration
	Yeŝ	Air	State	O/P-38-151	07/06/76	07/06/81
			· · · · · · · · · · · · · · · · · · ·			
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16.	Facility Description		<u> </u>		· · · · · · · · · · · · · · · · · · ·	
	Provide a topographic map of the a map should show the locations of a and man-made characteristics of the more than 200 feet (61 meters) and	ill wells, spring me boundaries. I	gs, and surface wate The scale of the map	r bodies in the au shall have one in	rea and describe nch (2.54 cm.) ed	the physical
17.	Latitude (degminsec.)		•	de (degminsec	.)	
	33° 28' 0"		81 [°]	13' 0"		
19.	the waste at the facility (e.g. di year (e.g. 30 tons); and the techn the provided sheet may be made and Certification	lique to be used	in handling each wa			
	I hereby certify (or declare) that knowledge.	: all data submit	tted in conjunction	with this Applicat	tion are true to	the best of m
	Date completed Application was mai	led or delivered	to the Department	9129180 month day yea	i	
	Operator's Signature	N. Al	ind-1			
	Owner's Signature Kon S). The	llez	· .******	_	
	Designing Engineer's Signature				Registration	No
FOR	DEPARTMENT USE ONLY					
Jate		ter Sent to Ty Receipt	Public Notice Issued	Public Hearin	ng Re	newal Date
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•						
	OCT 8 1980					
	DEPT. OF HEALTH AND TROUMENTAL CONTROL SOUND WASTE					

Tentative Decision

Final Decision

Hazardous Waste Materials Description	Hazardous† Characteristics	Action**	Annual Quantity Handled Amount Tons/Yri	Hazardous Waste Handling Technique
Acrylic Topcoat Filler Paste	Ignitable (IX E D001)	S	6.0	SCA Services
Prefinish Wash Solvent	Ignitable & Toxic	S	48.0	M & J Solvent Co.
Vinyl Wash Line Solvent	Ignitable & Toxic	S	20.7	M & J Solvent Co.
Oil & Grease	Ignitable	S	1.0	Harold Mason Oil Reclaim
Glue Pit Sludge & Water Base Paint	_	S	157	County Landfill
	•			
				V

^{*}For each hazardous waste listed give the hazardous waste characteristic(s) which identifies the waste as hazardous. These characteristics are ignitable, Corrosive, Reactive, Toxic, and Listed. Refer to R.61-79.1 of the Hazardous Waste Management Regulations for more detail.

^{**}Use the code which best indicates the action intended to be taken with the waste. S = Store T = Treat 0 = Dispose

Notification of Hazardous Waste Site

United States **Environmental Protection** Agency Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compen- paper. Indicate the letter of the item sation, and Liability Act of 1980 and must be mailed by June 9, 1981

Please type or print in ink. If you need additional space, use separate sheets of which applies.

	so monda sy sand s, 1501.										
1	Person Required to Notify:		Name ()zzie End	ile. Manager.	Finishes	Develo	oment			
		Enter the name and address of the person					Fogle, Manager, Finishes Development				
	or organization required to noth	γ.	Street	ive Chor	Road, P. O.	Box 1087					
			City ()rangebur	rg,	Sta	sc sc	Zip Code	29115		
3	Site Location:				oion Internat			n			
	Enter the common name (if known	wn) and	Name of Si	Buile	ling Products	Division					
	actual location of the site.		Street	Five	Chop Road, F	0. Box	1087				
			city Ora	ngeburg	County Ora	ngeburg su	se SC	Zip Code	29115		
;	Person to Contact:				[1- Oi			han David			
	Enter the name, title (if applicab		Name (Last	, First and Title	"Fogle, Ozzie	, Manager	, rinis	nes beve	opment		
	 business telephone number of to contact regarding information 	the person	Phone	(803) 5	34-2632						
	submitted on this form.										
	Dates of Waste Handling:										
	Enter the years that you estimat			Halimanin							
	treatment, storage, or disposal bended at the site.	egan and	From (Year)	Unknowr	To (Year)						
					· · · · · · · · · · · · · · · · · · ·						
	Waste Type: Choose the opti	ion you pre	efer to co	mplete							
	Option I: Select general waste to you do not know the general was encouraged to describe the site.	iste types or	sources,	ou are	Resource Cor	is option is avi servation and O CFR Part 26	Recovery				
	General Type of Waste: Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.	Source o Place an boxes.	f Waste: X in the ap	opropriate	listed in the r appropriate for the list of haz contacting the	of Waste: gned a four-dig egulations und our-digit numb ardous wastes e EPA Region :	der Sectio er in the l s and code	n 3001 of R poxes provid as can be ob	CRA. Enter the led. A copy of other led.		
	1. 🖄 Organics	1. 🗆 Mir	ning		located.						
	2. □ Inorganics		nstruction		<u> </u>)			
	3. D Solvents	3. □ Tex	tiles			 -	·	 			
	4. Pesticides	4. 🗆 Fer	tilizer					1 -			
	5. Heavy metals	5. 🗆 Pag	er/Printin	ıg		-		1			
	6. 🗆 Acids	6. 🗆 Lea	ther Tann	ing		-	<u>:</u> -				
	7. 🗆 Bases	7. 🗆 Iron	n/Steel Fo	undry		-	-<u>i</u>	1 1			
	8. 🗆 PCBs		emical, Ge			1 +	·	1 -	1		
	9. 🗆 Mixed Municipal Waste	9. 🗆 Pla	ting/Polisi	hing		<u> </u>		1 -	,		
	10. 🗆 Unknown	10. 🗆 Mil									
	11. Other (Specify)	11. 🗆 Ele	ctrical Cor	ductors			·	1			
		12. 🗆 Tra						45 . —— — (_			
		13. 🗆 Util	-				•	Table			
		14. 🗆 Sar		use				٠.:	r.		
		15. 🗆 Pho									
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of paneling.

Form Approved OMB No. 2000-0138

	Notification of Hazardous Waste Site	Side Two	
	Waste Quantity:	Facility Type	Total Facility Waste Amount
	Place an X in the appropriate boxes to indicate the facility types found at the site.	□ Piles □ Land Treatment	cubic feet 300 (estimated)
	In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.	3. \(\textit{\textit{A}}\) Landfill 4. \(\propto \) Tanks 5. \(\propto \) Impoundment 6. \(\propto \) Underground Injection	Total Facility Area square feet 300 (estimated)
	In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.	7. Drums, Above Ground 8. Drums, Below Ground 9. Other (Specify)	acres
	Known, Suspected or Likely Releases to	the Environment:	
	Place an X in the appropriate boxes to indicate or likely releases of wastes to the environment		☐ Known ☐ Suspected ☐ Likely 💆 None
	or likely releases of wastes to the environment	these items will assist EPA and State	and local governments in locating and assessing
· •	or likely releases of wastes to the environment. Note: Items Hand I are optional. Completing:	these items will assist EPA and State the items is not required, you are end	and local governments in locating and assessing
	or likely releases of wastes to the environment Note: Items Hand I are optional. Completing hazardous waste sites. Although completing	these items will assist EPA and State the items is not required, you are end	and local governments in locating and assessing
-	or likely releases of wastes to the environment Note: Items Hand I are optional. Completing hazardous waste sites. Although completing Sketch Map of Site Location: (Optional Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a	these items will assist EPA and State the items is not required, you are end	and local governments in locating and assessing
and the second s	or likely releases of wastes to the environment Note: Items Hand I are optional. Completing hazardous waste sites. Although completing Sketch Map of Site Location: (Optional Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a	these items will assist EPA and State the items is not required, you are end	and local governments in locating and assessing
	or likely releases of wastes to the environment Note: Items Hand I are optional. Completing hazardous waste sites. Although completing Sketch Map of Site Location: (Optional Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a	these items will assist EPA and State the items is not required, you are end	and local governments in locating and assessing
age:	or likely releases of wastes to the environment Note: Items Hand I are optional. Completing hazardous waste sites. Although completing Sketch Map of Site Location: (Optional Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a	these items will assist EPA and State the items is not required, you are end	and local governments in locating and assessing

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may halp describe the site conditions.

Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the

Name	Richard C. Wigger,	Vice President	Owner, Present
Street	One Champion Plaza		☐ Owner, Past ☐ Transporter
Crty	Stamford	State CT Zip Code 06921	☐ Operator, Present☐ Operator, Past
	10/11.2	<i>'</i> .	Other

· · · · · · · · · · · · · · · · · · ·								<u> </u>
SEPA	POTENTIAL HAZARDOUS WASTE SITE TENTATIVE DISPOSITION REGION SITE NUMBER							
File this form in the regional Haz- System; Hazardous Waste Enforce						otection Ag	ency; Site	Tracking
		I. SITE IDENTI	FICATION					
A. SITE NAME Champion	Internil		B. STREET					
Building Products		•	Five,	Chan	RAAA	, POP	301 x 0s	377
C. CITY		1 _	D. STATE	U	لاعتد	E. ZIP CO		' '
0			SC.			2911	Ī5	
Urangeburg						1 - 11	<u> </u>	
)		II. TENTATIVE	DISPOSITION					
Indicate the recommended action(s	s) and agency(ie	s) that should be i	nvolved by m	arking 'X' i	n the app	ropriate bo	kes.	
						ACTION	AGENCY	
REC	COMMENDATION			MARK'X'	EPA	STATE	LOCAL	PRIVATE
				1				
A. NO ACTION NEEDED NO HAZA	\RD			X		i	1,5 1,50	1
				1/1		 		
B. INVESTIGATIVE ACTION(S) NEE	DED (II yes, comp	olete Section III.)	· · · · · · · · · · · · · · · · · · ·	<u> </u>				
C. REMEDIAL ACTION NEEDED (II	yes, complete Sec	tion IV.)						
ENFORCEMENT ACTION NEEDE D. be primarily managed by the EPA of is anticipated.)	D (if yes, specify or the State and wi	in Part E whether th hat type of enforceme	e case will ent action					
E. RATIONALE FOR DISPOSITION							1	
	t							
F. INDICATE THE ESTIMATED DAT	TOT TIME DIE	COSTON	CAS	- 55451 001	·~·· T' DI /	··· IC NECES	TARY INDI	^ * * F TUE
(mos, day, & yrs)	E OF FINAL DIS	POSITION	G. IF A CASE	E DEVELOP! ED DATE ON				
• • • • • •			(mo, day,			.,		
H. PREPARER INFORMATION		· · · · · · · · · · · · · · · · · · ·						
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		NVESTIGATIVE A						
A. IDENTIFY ADDITIONAL INFORMA	TION NEEDED T	O ACHIEVE A FINA	L DISPOSITION	ON.				
B. PROPOSED INVESTIGATIVE ACT	IVITY (Detailed I	nformation)			_	_		
•	1			7				
	2. SCHEDULED DATE OF	3. TO BE PERFORMED BY	4.	1				
1. METHOD FOR OBTAINING NEEDED ADDITIONAL INFO.	ACTION	(EPA, Con-	ESTIMATED)		5. REMARK	s	
	(mo,day, & yr)	tractor, State, etc.)	MANHOURS					
a. TYPE OF SITE INSPECTION	- -						,	
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(2)	1	Ì		İ				
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	- [
(3)	1							
b. TYPE OF MONITORING				T				
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C. TYPE OF SAMPLING	\		1	1				
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	II. INVESTIGATIV	E ACTIVI	TY NEEDED	and PART	B.PRO	POSED INVE	STIGATIV	E ACTIV	ITY (Continued)
d. TYPE OF	LAB ANALYSIS						•		
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e. OTHER (sp	pecity)								
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C. ELABORAT INVESTIGA	E ON ANY OF THE TIVE WORK.	INFORMAT	ION PROVIDE	IN PART	B (on fro	n: & above) As	NEEDED 1	TO IDENTI	FY ADDITIONAL
D. ESTIMATED	MANHOURS BY AC	TION AGEN	ICY					 	
1. A	CTION AGENCY		2. TOTAL EST MANHOURS INVESTIGA ACTIVIT	MATED FOR TIVE IES		1. ACTION	AGENCY		2. TOTAL ESTIMATED MANHOURS FOR INVESTIGATIVE ACTIVITIES
a. EPA					b. STA	TE			
c. EPA CONT	RACTOR				d. 01	HER (specify)			
			IV	. REMEDI	AL ACT	IONS			
									r immediate control, e.g., re- be used in the space below.
1. A	CTION	2. EST. START DATE (mo,day,&)	3. EST. ENO DATE (mo,day,&yr)	4. ACTION A (EPA, Si Private	GENCY late,	5. ESTIMAT	ED COST	INDICA	FY 311 OR OTHER ACTION; ATE THE MAGNITUDE OF HE WORK REQUIRED
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B. LONG TERM See instruct	M STRATEGY (On Si ions for a list of Key	te & Off-Site y Words for e	e): List all lon each of the acti	g term solu ons to be u	tions, e.g	g., excavation, s spaces below	removal, gr	ound water	monitoring wells, etc.
		2. EST.	3. EST.	4.					5V 344 00 07UED 16710U
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a. EPA				b. sT					
C. PRIVATE PARTIES				d. 01	HER (SP	ecify)			



S.C. DEPT. OF HEALT REQC - Bureau of District Services 2600 Bull Street Columbia, S.C. 29201

MAY 1 5 1987

S. C. DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL Bureau of Solid & Hazardous Waste Management

Date 14 MAY 87
Subject LI Ply WOOD, Formerly
CAMPION INTERNATIONAL, FORMAL USPLYWOOD.
ORANGE BURG, S.C.
eno yourisHT NeeD.
They ARE ON MY LIST. I
TGO AND WROTE IT UP IN
VAY BERONL TRE DISTRICT
ON YOU HAVE WOULD BE APPRICATED
Jm Burckhalten
Josephalten Dikon EQC

Notification of Hazardous Waste Site

United States Environmental Protection Agency Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

810609

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A	Person Required to Notify:			Arrio Fa	gle, Manager,	Finishes	Develo	nment	
	Enter the name and address of to or organization required to notify		Name				50,0	pinerro	
	or organization required to notif	, •	Street	Five tho	Road, P. O.	BOX 1081			
			City	Orangebu	rg,	State	SC	Zip Code	29115
B	Site Location:				oion Internat			n	
	Enter the common name (if known) and		Name of	Site Build	ding Products	_Division_		/	
	actual location of the site.		Street	Five	Chop Road, P	. 0. Box 1	387		
	50003342	177	City 0	rangeburg	County Or at	ngeburg State	SC	Zip Code	29115
\bar{c}	Person to Contact:								
	Enter the name, title (if applicab	le), and	Name (Li	est, First and Title	"Fogle, Ozzie	, Manager,	Finis	hes Deve	lopment
	business telephone number of the to contact regarding information submitted on this form.	he person	Phone	(803)	534-2632			 	· · · · · · · · · · · · · · · · · · ·
_ D	Dates of Waste Handling:								
	Enter the years that you estimate	e waste		Harley av a	_				
	treatment, storage, or disposal bended at the site.	egan and	From (Yes	unknowi	To (Year)		 -		
E	Waste Type: Choose the opti	on you nre	efer to c	complete	· · · · · · · · · · · · · · · · · · ·				
_		•		•					
	you do not know the general was	Option I: Select general waste types and so you do not know the general waste types or encouraged to describe the site in Item I—D		, you are	Resource Con	s option is avai servation and I O CFR Part 261	Recovery		
	General Type of Waste: Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.	Source o Place an boxes.		: appropriate	listed in the re appropriate fo the list of haz contacting the	of Waste: ined a four-digi egulations unde ur-digit numbe ardous wastes EPA Region se	er Section or in the land code	n 3001 of R boxes provid as can be ob	CRA. Enter the ed. A copy of tained by
	1. 凶 Organics	1. 🗆 Mir	nina		located.				
	2. Inorganics	2. □ Cor	•	n		7) —	
	3. X Solvents	3. 🗆 Tex	tiles		 			1 -	
	4. Pesticides	4. 🗆 Fer	tilizer			-		1 —	
	5. Heavy metals	5. 🗆 Pap	er/Print	ting		-		1	
	6. □ Acids	6. 🗆 Lea	ither Tar	nning			<u> </u>	h	
	7. 🗆 Bases	7. 🗆 Iron	1/Steel I	Foundry			20	U	
	8. PCBs	8. 🗆 Che	•			1 4	نت		0
	9. Mixed Municipal Waste	9. 🗆 Pla	_	-		1 2		اہم تا	-0
	10. 🗆 Unknown	10. 🗆 Mil					<u> </u>		
	11. ☐ Other (Specify)	11. 🗆 Ele	ctrical C	onductors		1 3	 		
		12. 🗆 Tra							
		13. 🗆 Util					•	H	
		14. 🗆 Sar	-			- :	ത്	<	2
		15. □ Pho							
		16. 🗆 Lat	•	8 1	ļ				
		17. Unl		-: - \					
		18 . CX O tt		vash sol-					
		vents f	rom ma	anufacturi	ng				

Form Approved OMB No. 2000-0138 EPA Form 8900-1

of paneling.

ification of Hazardous Waste Site	Side Two	
ste Quantity:	Facility Type	Total Facility Waste Amount
e an X in the appropriate boxes to cate the facility types found at the site.	1. Piles	cubic feet 300 (estimated)
the "total facility waste amount" space		gallons
e the estimated combined quantity plume) of hazardous wastes at the site	4. Tanks	Total Facility Area
ing cubic feet or gallons.	5. Impoundment	square feet 300 (estimated)
the "total facility area" space, give the	6. Underground Injection	
stimated area size which the facilities ccupy using square feet or acres.	7. Drums, Above Ground 8. Drums, Below Ground	acres
	9. Other (Specify)	
Known, Suspected or Likely Releases t	to the Environment:	
Place an X in the appropriate boxes to indicate	te any known, suspected,	☐ Known ☐ Suspected ☐ Likely 💆 Nor
or likely releases of wastes to the environme	nt.	·
Note: Items Hand I are optional. Completing hazardous waste sites. Although completing		and local governments in locating and assessi couraged to do so.
Sketch Map of Site Location: (Optiona	il)	
Sketch a map showing streets, highways, routes or other prominent landmarks near		
the site. Place an X on the map to indicate	• -	
the site location. Draw an arrow showing the direction north. You may substitute a		
publishing map showing the site location.		
	•	
Description of Site: (Optional)		
Describe the history and present		
conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.		
Signature and Title:		
The person or authorized representative	Name Richard C. Wigger, Vic	e President 💆 Owner, Present
such as plant managers, superintendents, rustees or attorneys) of persons required		□ Owner, Present
to notify must sign the form and provide a mailing address (if different than address	Street One Champion Plaza	
n item A). For other persons providing	city Stamford State	CT zip Code 06921
notification, the signature is optional. Check the boxes which best describe the		☐ Operator, Past☐ Other
relationship to the site of the person required to notify. If you are not required to notify check "Other".	Signature Keller Cally	Date 6/9/81